Amateur Radio

JOURNAL OF THE WIRELESS INSTITUTE
OF AUSTRALIA
VOL 57, NO 8, AUGUST 1989

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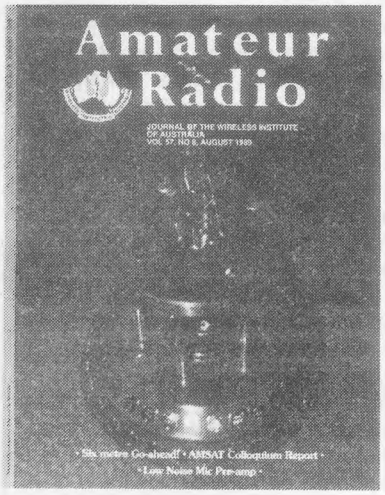

Cover

The Remembrance Day Contest Trophy won by VK4 in 1988. Which Division will win it later this month? Photo by John Friend VK3ZAB.

Deadlines

	Editorial	Hamads
September	7/8/89	9/8/89
October	11/9/89	13/9/89
November	9/10/89	11/1089

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Special Features

ZL Licensing for Visiting VKs - Ross Garlick ZL3AAA 24
Report of Third AMSAT- UK Colloquium - Graham Ratcliff VK5AGR 39
Down Memory Lane - Joe Ellis VK4AGL 16
Great Victorian Bike Ride - Ted Borowiecki VK3DXK 21
China Revisited - Wally Watkins VK4DO 20
Putting Up an Antenna Tower and Antenna - Tony Williams VK2DJW 18
Cobourg with an Extra Oscar - Jim Linton VK3PC 23
RAEM Calling - Tony Smith G4FAI 18
How Radio Came to Pitcairn Island - Bob Lowry VK4FPO 21
More of Cyclone Orson - Ray Gray VK6RQ 17
Tales of the Unexpected - David Barneveld VK4BGB 14

Technical Articles

Low-noise Mic Pre-amplifier - Ivan Huser VK5QV 12
Tearing the Hair with a Yaesu FT-7 - Eric Brookbank VK2EZB 4
Transmission of Data Information by Light - Paul Weaver VK6OF 9
RF Impedance Measurement Program Update - J Hodkinson VK2BHO 13

Reviews

Yaesu FT470 - Bruce Bathols VK3UV 26
BATC - The ATV Compendium (Book) - Doug White VK3BOW 8

Regular Features

Advertisers' Index 64
ALARA 43
AMSAT Australia 36
Awards, CARIE, FAMPARC 52
Club Corner 48
Contests - Calendar, All Asian, HF Results,
Rules - LZ DX, ... 49
30th All Asian Rules 50
Scandinavian, SEAnet Rules 51
Divisional Notes, VK3, VK4, 5/8th WAVE 52
Editor's Comment 2
Hamads 62
How's DX? 45
Intruder Watch 44
Morseword No. 29 27
Murphy's Corner (errata) 25
Over to You - Members Opinions 57
Pounding Brass 35
QSL's of the WIA Collection 28
Silent Keys - Obituaries 55
Spotlight on SWLing 29
Stolen Equipment 60
VHF-UHF : An Expanding World 31
WIA Directory 3
WIA News 4

Amateur Radio

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Material should be sent direct to PO Box 300, Caulfield South, Vic. 3162, in accordance with the deadline date shown on page 1 of this issue.

Acknowledgement may not be made unless specifically requested. All important items should be sent by Certified Mail. The editor reserves the right to edit all material, including Letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason.

~~EDITOR'S~~ PRESIDENT'S COMMENT

On Saturday, 17 and Sunday, 18 June, the first of the "new style" Executive meetings took place. Members of the Executive gathered from all around Australia to consider many issues of interest and concern to amateurs in this country.

It all began some time back, when a number of people began contemplating the structure and method of operation of the Wireless Institute of Australia. These discussions started to take a more definite form with the "Corporate Planning" day that was held last August (see the article "Why Corporate Plan" by Ron Henderson in April 1989 AR). Out of this came a better definition of the problem. Then came the possible solutions.

These solutions were canvassed at divisional level and gradually a definite proposal took shape - involve the divisions in more of the day to day running of the national body. Previously, the divisions (through their Federal Councillors) were only involved in setting policy directions once a year - the Federal Convention. Now it was suggested that they meet more often and help implement those policy decisions and make some of the day to day decisions that are part of the running of a national body.

Following a presentation and discussion on various management issues, the 1989 Federal Convention passed a key resolution on the structure of the WIA. Motion 89.08.01 resolved, ". . . to create an Executive consisting of one management oriented Councillor from each division, in order to extend awareness of Executive issues into the Divisions and in order to facilitate feedback of members' opinions", and ". . . to hold quarterly meetings of the full Executive".

The meeting on 17 and 18 June was the first such quarterly meeting. Members attending were those listed under the headings of "Federal Council" and "Executive" in the WIA Directory on the opposite page. Together with a couple of visitors, a total of eighteen people crammed into the Executive Office in Melbourne. It started at 10.30 am on the Saturday morning with a number of routine (but nonetheless important) matters. The Executive members first reported on their activities - ranging from attendance at a regional barbecue to participation in divisional activities. From there, the discussion moved to correspondence, progress on Executive and Council resolutions, allocation of portfolios and so on.

The afternoon was taken up with a review of the 1989 financial performance to date and the 1990 budget. This included a review of the fee structure that was first proposed at the Convention in April. It was interesting to note a couple of things with respect to this debate. Firstly, Executive members were better briefed on this issue, having had the chance to discuss it with their Divisional Councils and members. Secondly, one of the Divisions which was a principal supporter of the increased fee structure at the April Convention was now voting against it!

At around six pm, the meeting adjourned for a buffet dinner. This was an excellent occasion for the Executive members to get to know each other in a relaxed atmosphere. Ann McCurdy was present, and welcomed the opportunity to meet some of the well known "voices on the phone". There was also the chance to explore some of the financial issues and options in an informal way. This was a great help in drawing the more formal discussion to a conclusion when the Executive resumed its meeting on the Sunday morning. Other items covered on Sunday included the office computer systems, recruitment plans, the Call Book, 80th Anniversary Celebrations, disposal news items on Divisional Broadcasts, and liaison with the DOTC.

Then followed an "Extraordinary Convention" - a meeting of the Federal Council consisting of one representative from each Division. This allowed a number of items discussed by the Executive to become policy by being approved by the Council. Under previous arrangements, this could only have happened by a postal ballot process, or by waiting until next April! So, the final word on the financial issues was given by the Federal Councillors. A more detailed report on the proceedings appears on page 4 of July AR. At a quarter to four on the Sunday afternoon the meeting finished, and everyone started for home. Was it a success? It most definitely was! The Executive members from around Australia came to a better understanding of the running of the national body. A greater range of expertise was there to make the necessary decisions. Most importantly, it was a positive step in bridging the gap between the members and the Executive. No longer is the Executive remote from the Divisions, as each Division is represented on, and part of, the Executive.

Peter Gamble VK3YRP
Federal President

WIA DIRECTORY

Federal Council

Kevin Olds	VK1OK	ACT Councillor
Peter Jeremy	VK2PJ	NSW Councillor
Peter Mill	VK3ZPP	Victorian Councillor
David Jerome	VK4YAN	Queensland Councillor
Bill Wardrop	VK5AWM	SA Councillor
Neil Penfold	VK6NE	WA Councillor
Joe Gelston	VK7JG	Tasmanian Councillor

Executive

Peter Gamble	VK3YRP	Federal President
Ron Henderson	VK1RH	Vice Chairman
Brenda Edmonds	VK3KT	Federal Education Officer
Bill Rice	VK3ABP	Editor Amateur Radio
George Brzostowski	VK1GB	Federal Executive
Kathy Gluyas	VK3XBA	Federal Treasurer
David Wardlaw	VK3ADW	Immediate Past Federal President

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Education	Brenda Edmonds	VK3KT
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Historian	John Edmonds	VK3AFU
Intruder Watch	Gordon Loveday	VK4KAL
Int'l Travel Host Exch	Ash Nallawalla	VK3CIT
QSL Mgr (VK9, VKØ)	Neil Penfold	VK6NE
Standards & FTAC	Rob Milliken	VK1KRM
Tapes (Federal News)	Bill Roper	VK3ARZ
	Ron Fisher	VK3OM
Videotape	John Ingham	VK5KG
WICEN	Bill Wardrop	VK5AWM

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Helen Wageningen		Membership & Circulation
June Fox		Accounts & EDP
Earl Russell	VK3BER	EDP Consultant
Ron Fisher	VK3OM	Librarian

DIVISIONS

Div	Address	Officers			Broadcasts	Fees	
VK1	ACT Division GPO Box 600 Canberra ACT 2601	President Secretary Treasurer	Ted Pearce Jan Burrell Ken Ray	VK1AOP VK1BR VK1KEN	3.570 MHz 2m ch 6950 70cm ch 8525 2000 hrs Sun	(City) Full (F) (City) Assoc (A) (Country) Full (C) (Country) Assoc (T) Pens. (G) Stud. (S) Family (X)	$44.00 $44.00 $44.00 $44.00 $33.00 $31.00 $25.00
VK2	NSW Division 109 Wigram St Parramatta NSW 2124 (PO Box 1066 Parramatta) Phone (02) 689 2417	President Secretary Treasurer	Roger Henley Peter Balnaves David Horsfall	VK2ZIG VK2CZX VK2KFU	(R Denotes repeater) Times 1100 and 1915 on Sun 1.845 MHz AM, 3.595 AM/SSB, 7.146 AM (1100 only) 28.320 SSB, 52 120 SSB 52.525 FM 147.000 FM(R) 438.525 FM(R) 584.750 (ATV Sound) Relays also conducted via many repeaters throughout NSW.	F A C T G S X	$41.50 $39.50 $41.50 $39.50 $34.50 $22.50 $24.50
VK3	Victorian Division 38 Taylor St Ashburton Vic 3147 Phone (03) 259 9261	President Secretary Treasurer	Jim Linton Barry Wilton Rob Hailey	VK3PC VK3XV VK3XLZ	1.840 MHz AM, 3.615 SSB, 7.085 SSB, 147.250 FM(R) Mt Macedon 147.225 FM(R) Mt Baw Baw 146.800 FM(R) Mildura 438.075 FM(R) Mt St Leonard 1030 hrs on Sun	F A G S X	$50.00 $45.00 $38.00 $27.00 $27.00
VK4	Queensland Division GPO Box 638 Brisbane Qld 4001 Phone (07) 284 9075	President Secretary Treasurer	David Jones John Aarsse Eric Fittock	VK4NLV VK4QA VK4NEF	3.605 MHz, 7.118, 14.342, 18.132, 21.175, 28.400, 52.525 regional 2m repeaters and 1296.100 0900 hrs Sunday Repeated on 3.605 & 147.150 MHz, 1930 Mon	F A C T G S X	$45.00 $45.00 $45.00 $45.00 $36.00 $27.00 $27.00
VK5	South Australian Division Thebarton Rd West Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone (08) 352 3428	President Secretary Treasurer	Don McDonald Hans van der Zalm Bill Wardrop	VK5ADD VK5KHZ VK5AWM	3.550 MHz, 14.175, 28.470, 53.100, 147.000 FM(R) Adelaide 146.700 FM(R) Mid North 146.900 FM(R) South East ATV Ch 34 579.00 Adelaide ATV 444.250 Mid North (NT)3.555, 146.500, 0900 hrs Sun	F A C T G S X	$44.00 $44.00 $44.00 $44.00 $35.00 $26.00 $26.00
VK6	West Australian Division PO Box 10 West Perth WA 6005	President Secretary Treasurer	Alyn Maschette Pending Bruce Hedland - Thomas	VK6KWN VK6OO	146.700 FM(R) Perth, at 0930 hrs Sun, relayed on 3.560 MHz, 7.075, 14.110, 14.175, 21.185, 28.485, 52.080, 438.525(R) Country relays 3.582, 147.350(R) Busselton 146.900(R) Mt William (Bunbury) Broadcast repeated on 3.560 at 1900 hrs.	F A C T G S X	$42.00 $42.00 $42.00 $42.00 $35.00 $22.00 $23.00
VK7	Tasmanian Division PO Box 1010 Launceston TAS 7250	President Secretary Treasurer	Mike Wilson Bob Richards Peter King	VK7ZWW VK7NRR VK7ZPK	146.700 MHz FM (VK7RHT) at 0930 hrs Sun relayed on 147.000 (VK7RAA), 146.750 (VK7RNW), 3.570, 7.090, 14.170, 52.100, 144.100 (Hobart) Repeated Tues 3.590 at 1930 hrs	F A C T G S X	$42.00 $42.00 $42.00 $42.00 $38.00 $24.00 $22.00

VK8 (Northern Territory) is part of the VK5 Division and relays broadcasts from VK5 as shown (received on 14 or 28 MHz).
Note: all times are local. All frequencies MHz.

WIA NEWS

Bill Roper VK3ARZ, General Manager & Secretary

USE OF 6 METRES IN AUSTRALIA

As keen VHFers are only too well aware, the fiasco of Channel 0 and 6 metres has caused a lot of headaches, particularly to east coast amateurs in recent months when propagation has opened up this frequency to much of the world, and they were legally prohibited from using any frequency below 52 MHz.

Well, I have great news for you. The concerted approach by the WIA, the largest body representing radio amateurs in Australia, has paid off, and achieved a result that could never have been achieved by fragmented approaches from individuals.

The submission by the WIA to the DoTC about the use of frequencies in the prohibited 50 - 52 MHz portion of the band has been approved, with only minor amendments. This submission was the result of work, advice and suggestions from many keen 6 metre enthusiasts, but its success was due mainly to the efforts of Peter Stackpole, VK1RX.

Let me now give you the details of the new rules pertaining to operation in the 50 - 52 MHz segment of the 6 metre band.

First of all I quote extracts from a letter, signed by Bill May, the Acting Manager, Regulatory Section of DoTC in Canberra, and received by the WIA on the 4th July.

Amongst other things, Bill wrote.....

> "The submission put forward by the Institute was found most comprehensive and has been carefully considered. While several minor problems were identified, essentially the proposed radial sharing criteria appear to provide a simplified set of rules for shared use of the band.
>
> Accordingly, I am pleased to advise that as from 1 July 1989, the revised conditions set out in attachment (A) will apply to the use of the 50 to 52 MHz band by the Amateur Service. These provisions replace those contained in departmental brochure DOC71 appendix C footnote H.
>
> In essence Amateur Stations located in South Australia, Western Australia and the Northern Territory may operate unrestricted. Amateur stations which are located outside certain radial distances, in the remaining states, are subject to limits in operating frequency, emission mode and power. In the Australian Capital Territory no distance contraints apply.
>
> Notwithstanding the changed conditions, I would stress that the shared use of the 50 to 52 MHz band by the Amateur Service is strictly on the basis that no interference is caused to the reception of Channel 0 television stations. Should the Department receive complaints, the sharing arrangement will be reviewed."

The bottom line of the revised conditions that Bill May referred to in his letter is as follows:

Amateur stations in VK5, VK6, VK8, VK9, & VK0 may operate, provided no interference is caused to the reception of Channel 0 transmissions, anywhere in the 50 - 52 MHz band, using any of the authorised modes, and with the legal maximum transmit power of 400 watts.

Amateur stations located in VK2, VK3, VK4 & VK7 are permitted to operate, provided no interference is caused to the reception of Channel 0 transmissions, in the sub-band 50.05 to 50.20 MHz, on the following conditions:-

They must be located outside the following minimum radial distances:

120 km from Channel 0 main television stations
60 km from Channel 0 translator stations
60 km from translator stations with Channel 0 inputs; and
They must only use emission modes of CW and SSB, with a maximum power of 100 watts.

Brochure DOC71 Appendix C Footnote H.

H. Amateur Stations are permitted to operate within this band subject to the conditions set out below;

(i) No interference is caused to the reception of channel 0 transmissions;

(ii) In New South Wales, Victoria, Queensland and Tasmania, operation is restricted to:

- (a) the sub-band 50.5 to 50.20 MHz;
- (b) locations outside the following minimum radial distances from;

Television channel 0 main stations 120 km
Television channel 0 translators stations 60 km
Television translator stations with 60 km channel 0 inputs

- (c) emission mode 200HA1A with a maximum transmitter power of 100 watts pY; and
- (d) emission mode 4K00J3E with a maximum trans mitter power of 100 watts pX.

(iii) In the Australian Captial Territory operation is restricted to:

- (a) the sub-band 50.05 to 50.20 MHz;
- (b) emission mode 200HA1A with a maximum trans mitter power of 100 watts pY; and
- (c) emission mode 4K00J3E with a maximum trans mitter power of 100 watts pX.

Amateur stations located in VK1 are permitted to operate the same as those in the other eastern states of Australia, except that the radial distances do not apply.

The attachment (A) referred to in the letter from DoTC is published in full so that you can amend your copy of DOC71.

The letter from DoTC also included a list of the locations of the various Channel 0 main TV stations and translators. This list is also published so that amateurs will be able to calculate accurately just where they are in relation to the radial distance limitations.

I am sure that all amateurs will be pleased at the commonsense approach used by the DoTC in approving the WIA submission, and appreciate that the approval has come through a little quicker than at first thought possible. There will certainly be a lot of activity on 6 metres at the next equinox when prime F2 conditions should reappear.

Channel O Station Locations

Callsign	Location	Co-ordinates Latitude Deg	Latitude Min	Longitude Deg	Longitude Min
MAIN STATIONS					
ABMNO	SW Slopes/E Riverina Mt Ulandra	34	49.5	147	54.0
DDQO	Darling Downs Toowoomba	26	53.5	151	36.5
TRANSLATOR STATIONS					
ABC/0	Goulburn Mt Gray	34	45.5	149	45.5
ABCN/0	Kandos Mt Cumber Melon	32	52.5	149	59.5
ABCN/0	Portland/Wallerawang Garlands Hill	33	24.5	149	57.0
ABSN/0	Cooma Nanny Goat Hill	36	14.0	149	7.0
ABUN/0	Glen Innes Carpenters Hill	29	43.0	151	41.5
ABWN/0	Narooma Buckeridge Lookout	36	12.0	150	5.5
NENO	Tamworth Bald Hill	31	4.5	150	57.5
ABMQ/0	Nebo Smiths Hill	21	38.5	148	42.0
ABNQ/0	Gordonvale 5 km North of town	17	3.5	145	46.5
ABNT/0	St Helens St Helens, Parnella	41	20.0	148	17.0
ABMN 0/11	Young (landra St)	34	18.0	148	18.8
ABMN 0/66	Tumbarumba (.8 km east of PO)	35	46.5	148	1.0
DDQ 0/5A	Toowoomba (Picnic Point)	27	35.0	151	59.0
DDQ 0/65	Chinchilla	-		-	
DDQ 0/66	Murgon	-		-	
DDQ 0/64	Millmerran	-		-	
DDQ 0/66	Tara	-		-	
DDQ 0/5A	Moranbah	-		-	

EXAMINATION DEVOLVEMENT

Examination Question Banks

After the flurry of activity by DoTC early in 1988, and then the long period of no apparent activity at all, the examination devolvement process started to move again following the long delayed appointment by DoTC of an Examinations Officer, Keith Carr-Glynn.

Although being earlier advised that they would not be available until mid-July, the DoTC drafts of the theory question banks were received by the WIA on 11th May 1989. These question banks were immediately reviewed by a number of interested and qualified amateurs, and those questions which seemed to call fo comment were circulated to Divisional Education Officers for comment.

The weekend of 24th and 25th June 1989 saw a meeting of some of these Officers, and a few other interested people, at the Executive Office in Melbourne. For over 22 hours on that weekend, this Education group reviewed questions, and discussed examination procedures.

By general agreement a few questions were recommended to be deleted, some were modified rather drastically, and many were reworded in minor ways.

This does not mean that the WIA was dissatisfied with the questions overall. Most of the questions are ones which have been appearing on examination papers for years without attracting complaint. The aim of the Education group was to ensure that the "average" examination candidate would be quite clear about the intention of each question, and to check that questions no longer relating to the current syllabus did not continue to appear.

The Education group's suggestions and comments on the question banks were returned to DoTC as promised early in July. As yet the WIA has not received a formal response to our suggested amendments, but telephone discussion suggests that our ideas were welcomed, and will be incorporated.

However much revision has taken place now, further refining of the question banks will be inevitable. It is probable that the initial release of the question banks will be on a trial basis for the first 12 months, with comments accepted from all users.

The Education group stressed the importance of all WIA groups intending to administer examinations working together and sharing information and experience gained. Ideally, Brenda Edmonds, VK3KT, the WIA Federal Education Co-ordinator, would like to receive reports on all examination papers used, and analyses of individual questions so that the anticipated regular reviews of the question banks will be based on statistics, not just feelings.

In the meantime, while we are awaiting the introduction of devolved examinations, DoTC have advised that they will be running the existing style examinations up to and including February 1990.

Morse Code Generation Program

When the amateur examination devolvement program started moving again some weeks ago, DoTC sent out a pro-forma to all those parties who had indicated last year that they may be interested in conducting examinations on behalf of DoTC.

In a Devolution Update circular letter received on 22nd June 1989, DoTC advised that they received 27 responses to those pro-formas. In addition to a rather inaccurate attempt to suggest that the WIA was holding up devolvement because we needed more than a few weeks to review the many shortcomings with questions in the DoTC proposed question banks, this circular letter enclosed a copy of the DoTC examination Morse generation program.

The program is on a 5 1/4 inch diskette and has been designed to be used in an IBM, or clone, personal computer. A certain amount of flexibility seems to have been built into the program, and early tests seem to indicate its' suitability for Morse receiving examinations.

MORSE TRAINING COMPUTER PROGRAM

As it stands the DoTC morse program is a one-time-run utility, doing what it was designed to do. However, for use as a morse training utility, it falls a bit short of ideal because the training aspect was not a part of the original design.

The VK1 Division was concerned about these shortcomings and, with DoTC approval, has now considerably improved the program to become a fully enhanced, menu driven, model.

At the start of the development exercise, two major requirements were identified. Firstly, the program had to be user friendly; and secondly, transmission should be repeatable and adjustable from within the program, not just at the start. The overriding requirement not to change any timing algorithms or formulas was retained, as stipulated by DoTC.

Eventually, after many candles were burnt, particularly by Phillip Rayner, VK1PJ, and several tests were made by DoTC, Phillip's wife and other VK1 amateurs, the final model surfaced, was tested, and is now approved for distribution.

Upon program execution the user is presented with the Main Menu. From there the user may select new settings for the speed, etc, get a block of text to transmit, transmit the current morse buffer, edit the morse buffer, display important program information, or exit the program.

"SET UP" on the main menu involves answering a series of questions selecting either ITU, AOCP or NAOCP format, speed, sound on/off, hard copy on/off, etc. All of which can be repeated until the transmitted morse is tailored to the user's requirements.

When the program executes, the morse buffer initially contains test text which, when transmitted, will allow the user to accurately time program execution. This is presented to enable users to check and ensure program timing is correct because, unfortunately, some "home" computer timers can be way off.

When the user is satisfied with the timing and requires some text to transmit, there are options to load random 5 letter groups with (or without) numbers, ASCII text files, text from the keyboard and, of course, the test message.

Selecting the "KEYBOARD ENTRY" option will present the user with a simple screen editor for text up to a length of 500 lines with each line containing up to 70 characters.

Output can be achieved in a combination of three ways. Sound through the PC speaker, hard copy on the printer, or through the parallel/serial ports.

As a minimum the program requires less then 200k of RAM and will execute on any IBM XT/AT, and most clones. Other PCs covered include the Sanyo 550/555, WANG APC and the Commodore PC (not C64).

In giving me the information about this program, Phillip, VK1PJ, stressed that acknowledgement must be given to DoTC staff for making the program available, and to the DRI office staff in Canberra for their invaluable assistance during program development and testing. Thanks are also extended to DoTC for granting their approval to the VK1 Division to distribute the program.

Copies of the program are available on disk by sending $5.00 for P & P, to either the VK1 Division (see the WIA directory on page 3), or directly to Phillip Rayner, VK1PJ, 33 Willoughby Crescent, Gilmore, ACT, 2905.

Having checked out the program, I can thoroughly recommend it as being by far the best morse training program on computer that I have seen. A definite must for anyone who is interested in Morse and who has an IBM style computer.

DOC71

Welcome news was received from the Canberra office of DoTC this week. After many delays the booklet, "Licence Conditions and Regulations Applicable to the Amateur Service", more commonly known as "DOC71", has finally been printed and distributed to State DoTC offices.

However, as mentioned above, Appendix C, Footnote H, appearing on page 19 of the booklet will need to be modified in view of the new operating conditions now current on the 6 metre band.

Further news is that the "Amateur Service - Operating Procedures" booklet, more commonly known as "DOC72", is currently at the printers.

WIA 80 LOGO COMPETITION

The WIA, which is the world's oldest national radio society, will soon begin celebrating its 80th birthday.

A part of this celebration will be the creation of a logo.

We need your ideas on paper. WIA members, their family or friends can submit logo designs.

The WIA 80 logo must included the familiar standard WIA wings emblem logo. It should also clearly give the message that the WIA was founded in 1910, or 80 years ago.

A judging panel will review all entries. It will have the right to choose any design submitted, parts of one or more entries, or simply use the entries as inspiration to create a logo.

Entries close on August 14th, 1989. They should be sent to:

WIA Logo Competition, Wireless Institute of Australia, PO Box 300, Caulfield South, 3162.

MAGPUBS

For many years now, the WIA has made available to its members a range of overseas radio publications at a discount price. This service, known as MagPubs, was handled at the Divisional level by the Divisional Book Shops, with overseas purchases and orders being centrally handled by the Federal Office.

In recent years a number of problems arose with the overseas ordering of publications. In the past 12 months there has only been a restricted number of books available at Divisional Book Shops, and overseas orders were often taking over 6 months to arrive at the Divisional Book Shop.

Members will be pleased to learn that the MagPubs operation has been completely overhauled and is now back in business, bigger and better than ever before.

Monthly half page advertisements showing some of the greatly expanded range of publications now available will appear in Amateur Radio magazine each month, commencing with this issue. If your Divisional Book Shop does not have the particular publication that you want in stock, then the expected delay in obtaining it is expected to be no more than a couple of weeks.

Divisional Book Shop officers have the latest list of publications available, so make sure you contact them first if you are contemplating purchasing a publication relating to amateur radio.

EXECUTIVE PORTFOLIOS

Although a substantial amount of the time put in by the delegates from all Divisions at the Executive meeting held over the weekend of 17th & 18th June 1989 was spent dealing with the financial aspects of the WIA (and they have been comprehensively reported elsewhere), a number of other business items were handled.

Among the 24 business items on the agenda, was the appointment of the Federal Co-ordinators for 1989. The listing of these Federal Co-ordinators is published in the WIA Directory, which now appears on page 3 of every issue of Amateur Radio magazine.

The only change from last year was the appointment of Bill Wardrop, VK5AWM as the WICEN Co-ordinator.

Also at that meeting, the Executive portfolios were allocated, and they are as follows:

Vice Chairman	Ron Henderson, VK1RH
Editor	Bill Rice, VK3ABP
Recruiting & Membership	Brenda Edmonds, VK3KT
FARWP II Co-ordinator	George Brzostowski, VK1GB
Treasurer	Kathy Gluyas, VK3XBA
IARU Liaison	Ron Henderson, VK1RH
Scanner of News and Press Releases	Bill Rice, VK3ABP
DoTC Liaison	Peter Gamble, VK3YRP
DoTC Liaison Assistant	Kevin Olds, VK1OK
FTAC Chairman	Rob Milliken, VK1KRM
FTAC Liaison Officer	Kevin Olds, VK1OK
Standards	Rob Milliken, VK1KRM
CCIR Liaison	Ron Henderson, VK1RH & David Wardlaw, VK3ADW

SERIAL NUMBERS OF EQUIPMENT OFFERED FOR SALE

Also on that weekend, during the Extraordinary Convention, a motion, proposed by the VK2 Division, and unanimously passed by all delegates, recommended that all advertisements for sale or disposal of equipment via a WIA publication or broadcast should include the serial number of the equipment offered.

In proposing this motion, the VK2 Division argued that this proposal would reduce the likelihood of stolen equipment being advertised via WIA outlets. If the serial number was included in the advertisement, then all equipment offered for sale could be readily checked against the Stolen Equipment Register, and if the serial number advertised did not match that on the equipment, then it would be up to the seller to explain the discrepancy to the buyer's satisfaction.

The inclusion of the serial number in all future Hamads is not compulsory, but is strongly recommended to all members.

32ND JAMBOREE-ON-THE-AIR 1989

Each year there seems to be a last minute rush organising amateur stations to operate with the scouts and guides, etc for this annual event.

The 1989 Jamboree-On-The-Air will take place over the weekend of 21st and 22nd October, commencing at 00.01 LOCAL TIME on the Saturday, and ending 48 hours later.

With the sunspot cycle improving radio conditions worldwide, this 1989 JOTA could be bigger than ever.

Have you started planning your participation yet?

WIA 80TH ANNIVERSARY AUSTRALIAN RADIO AMATEUR CALLBOOK

Have you bought a Call Book lately? Do you buy one faithfully every year? Did you buy one when you first became licensed, and then just never bothered to update it?

Every active amateur should arm himself with an up-to-date Call Book.

The next Call Book to be published by the WIA is to be called the **1990 80th Anniversary Australian Radio Amateur Call Book**, and it should be available towards the end of September this year.

It will contain as many up-to-date callsigns as our records, and DoTC records, contain. It will also incorporate reference material, including repeater listings and location maps, beacons listings, DXCC, and Australian band plans.

Members may not realise the amount of work that goes in to publish this list of callsigns in a Call Book format. It requires the efforts of every staff member in the Executive Office for some weeks, not to mention the several volunteers whose assistance is invaluable.

Last year the WIA negotiated an agreement with the Australian Government Publishing Service to print, publish and sell the list of callsigns of all licensed Australian amateurs.

This agreement is a strict contract to publish the Call Book annually for the contract period of three years.

Certain conditions apply, including payment of a royalty to the Government amounting to 7 1/2% of the retail cover price of each copy sold.

The WIA membership database records show details of members and non-members and, in the past, these records were updated from hand-written lists provided to us by the DoTC at regular intervals.

This system changed when the Department was computerised. The lists of changes, new licensees, etc. was not forthcoming, so our records of non-member amateurs was not as accurate as we would have liked.

After many months of negotiation, these records are once again available to us. However, because it takes an incredible number of hours to go through the many changes listed - change of address, upgrading of callsign, change of name, etc etc, a decision was made to combine the DoTC list with our records only at Call Book publication time.

As our members keep us informed of their changes of address (otherwise Amateur Radio magazine does not arrive!), their details published in the Call Book are taken from the WIA records and not DoTC records. Bear in mind that these WIA records are only as accurate as we, and you the member, make them.

One of the most important priorities in the production of a Call Book is the list of suppressions. For one reason or another a few amateurs do not wish their address, and sometimes even their name, to be identified in the Call Book, but this suppression request must be on file in writing in the Executive Office.

We will endeavour to keep the recommended retail price of the 1990 Call Book to the same level as the 1988 Call Book, that is $9.90 to non-members and $8.50 to members. However, we cannot promise that this will be the case every year!

We hope to gain more advertisers for this Anniversary edition of the Call Book, and if you can assist in this regard, please do not hesitate to contact the Executive office.

The Executive Office has a strict priority check-list and calendar, which has already been in progress for several weeks, to commence the countdown for publishing the 1990 Call Book.

This includes advising DoTC of computer tape specifications, planning front cover design, begin warnings in Federal Tapes and Amateur Radio magazine about the cut-off date of 11/8/89 for information to be published, forward a computer tape to DoTC, correspondence to potential advertisers, tapes back from DoTC to be translated to language and disks our computer can read, telephone follow-up to advertisers, letters to Divisions and booksellers soliciting orders, editorial content to be gathered and forwarded to typesetters, collection of advertising copy, completion of WIA database and merging with the DoTC tape, checking of the final result for errors, especially suppressions, final proofing, and eventually the delivery of the Call Books in cartons for transport to purchasers.

Will you be buying a copy of the 1990 WIA 80th Anniversary Australian Radio Amateur Call Book?

FEDERAL INTRUDER WATCH CO-ORDINATOR

It is with regret that I announce the reluctant resignation of Bill Horner, VK4MWZ, from his position as Federal Intruder Watch Co-ordinator. Bill has only been in that position for a short period of time, but devoted a lot of effort towards the interests of Intruder Watching in Australia.

The new Federal Intruder Watch Co-ordinator is to be Gordon Loveday, VK4KAL. Gordon has been the VK4 IARUMS Co-ordinator for many years and is very experienced in the field of Intruder Watching. I understand that Gordon, who lives west of Rockhampton, is blessed with a virtually noise free receiving location.

RECIPROCAL LICENSING AGREEMENT WITH DENMARK

A last minute item of news to hand from DoTC advises that a reciprocal licensing agreement has finally become effective as from 19th June 1989 between Australia and Denmark. Negotiations for this long awaited agreement first started in 1971.

This nows brings the number of countries, with whom Australia has reciprocal licencing agreements, to 16.

ar

Book Review

Doug White
VK3BOW
5 Penfield Avenue,
North Ringwood 3134

BATC "The ATV Compendium"

The WIA has received the latest handbook from the British Amateur Television Club. This new publication puts before the Amateur, exciting information and projects, within the ability of the average amateur to construct and get going. The latest techniques and devices are use in the projects, so that the constructor does not need elaborate equipment to build the systems, nor expensive test gear to adjust the projects to achieve excellent results.

There are three sections: Video Circuits; Special Projects; R F Projects.

Video Circuits

There are ten projects in this section to provide video signal generation, video switching, fading, superimposition and signal distribution functions prior to the modulation and transmission of video information. Each circuit is described using a circuit diagram.

Special Projects

There are three - digital framestore, universal sync generator, spectrum Eprom programmer.

The digital framestore (in simple terms) uses an analogue to digital converter to change the analogue video signal into a digital signal. In the digital format, the signal can be processed to a level of very high quality. A digital to analogue converter returns the signal to the analogue form. It sounds simple, but the project is the most complex one in the compendium, because of the need to sample the analogue signal at a suitable rate, store the digitised signal in memory, allow for processing, and retrieve the signal at the same rate and sequence as in the original.

RF Projects

There are three: GaAs converter; 24cm FM ATV transmitter, 3cm ATV transceiver.

These days, Amateurs are not motivated to construct transmitters or receivers, because the commercial units provide facilities which are difficult to copy. Power supplies, power amplifiers, converters and computer "add-ons" seem to be the extent of home-brewing. The 24cm transmitter consists of a video and audio modulator and a phase lock loop (PLL) exciter. The 3cm unit

Continued on page 13

New Headine this too long

Transmission of Data Information By Light

Paul Weaver VK6OF
23 Waddell Road
Palmyra WA 6157

What's So New About That?

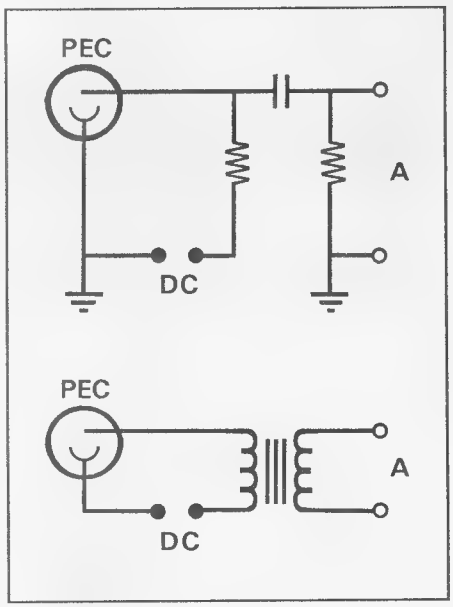
Marvellous applications of fibre optic techology today are turning up in almost every imaginable location. Telecom are busy installing vast networks of optical cable across the continent and sophisticated aircraft are increasingly relying on light for the transmission of vital data rather than electrically by wire.

To what must amount to many thousands of radio amateurs throughout the world who have worked as cinema projectionists the modern technology presents little mystery. The main source of synchronised sound in cinemas has been, for many years, achieved by an optical scan of a photographed modulation pattern printed on the side of the film being projected.

Simply explained, a stable, narrow slit of light is aimed at the sound track and the result is a fluctuating amount of light on the other side. This light falls on to a photo sensitive surface and the optical fluctuation this is converted to an electrical signal for amplification.

Modern projectors use variations of solar cells for this conversion but in the "good old days" the only device was the photo electric cell, the PEC. I have a certain amount of reverence for the PEC. It must rate as one of the most reliable electronic devices ever invented. There would be many old 35 millimetre cinema projectors still operating with photo electric cells 40-50 years old and, in this age of compact discs, that's not too bad. I wonder how many of today's CD players will still be working in 20, let alone 50 years. To be sure there have been PEC failures but more often than not they have been induced by tinkerers who have slipped with a screwdriver. New replacements are next to impossible to obtain and the solution has been to improvise with an ordinary solar cell.

The two examples of PECs in the photograph are typical examples taken from old 35 mm projectors. The CE-70 is an American type made by Cetron of Illinois. The base has come loose at some time and been secured with sticky tape. The CM8 is an Osram (UK) model and differs from the former inasmuch as the cathode is connected via the screw terminal at the top. Both cells are still usable.



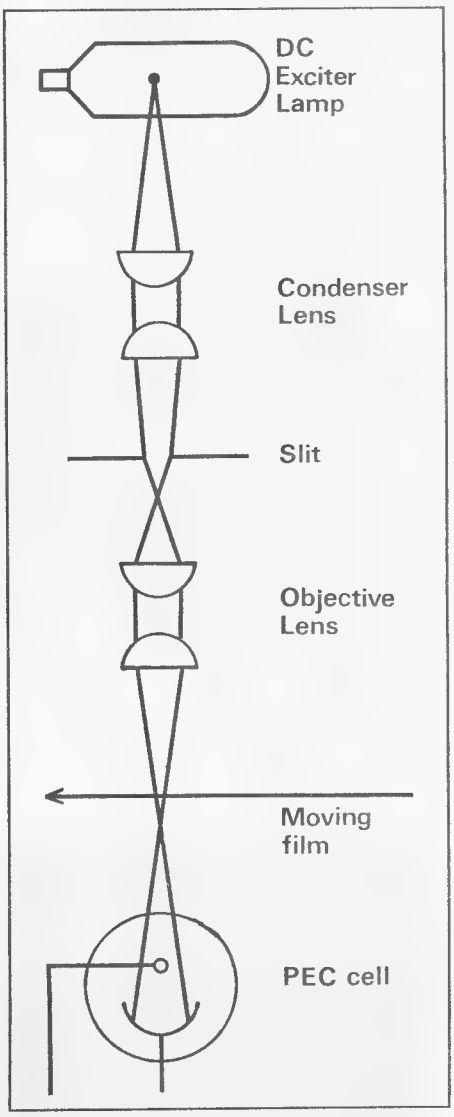
Typical PEC Amplifier Couplings

The reliability of these devices, no doubt, is due to the fact that they operate cold. There is no heater as in conventional valves. The large shield shaped element is the cathode or emitter as it is sometimes known. The rod assembly in front of it is the anode and is so designed as to cast as little shadow as possible on the inwardly curved surface of the cathode which faces the light source. When light fluctuates on the surface of the cathode, a proportional emission of electrons is attracted to the anode or again, as it used to be known in the old days, the plate. The electrical fluctuation is coupled to an amplifier and speaker and the resulting sound transmitted to the audience.

A standard test still carried out by all projectionists when the equipment is first switched on is to flick a scrap of paper or finger in the path of the light beam. The reassuring plop from the speaker tells that all is well. The component that does fail in this type of optical system is the exciter lamp and many operators have burned finger tips replacing a failed lamp during a performance.

The argon filled photo-cells typically operate on 90 volts DC. The power supplies for both the exciter lamp and the PE cell has to be very well filtered as the slightest voltage ripple does disastrous things to the audio quality. Similarly, the light slit must be focused precisely and horizontally on the film plate otherwise there is also a great fall off in sound quality.

Apart from new chums with screwdrivers the prime enemy of such systems is oil. Projectionists regard the oiling of their beloved machines as a kind of ritual and the result more often than not is an accumu-



Optical Schematic Diagram

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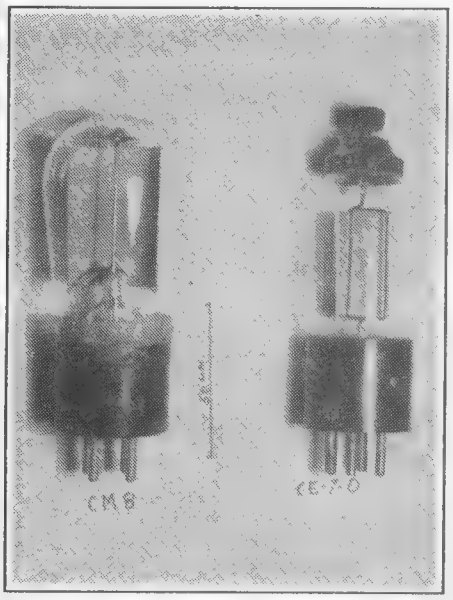
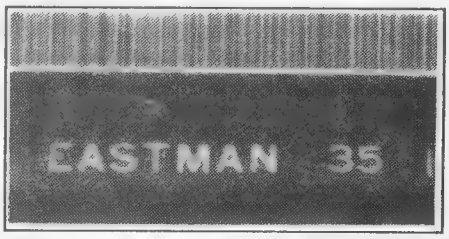
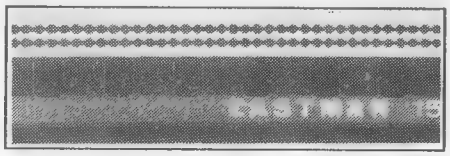


Two PE cells - CM8 and CE-7-0



An enlargement of a variable density soundtrack (negative image).



An enlargement of a duplex variable width soundtrack (negative image).

lated pool of Castrol's Perfecto Medium. Oil in the lens assembly has a rather deadening effect on the sound and is due to the fact that the PE cells are not very sensitive to yellow light. Perfecto Medium is also ideal for lubricating Model 15 teleprinters and other intricate machinery and amateurs who manage to cadge some from their friendly local projectionist should remember that a little goes a long way!

Despite the apparent basic simplicity of this type of sound system, very sophisticated optical versions have appeared from time to time involving stereophonic sound and control tracks for volume and other effects. They never took-off. Cinema owners are notoriously "tight fisted" and too few made the conversions when offered. Most cinema films screened in Australia today are 35 mm and still use the monophonic, variable width sound track as is shown in the example although there was a recent flush of optical stereo. Many of the old black and white Australian newsreels had what was called a variable density track which is also shown and there were a half dozen or so other variations but I don't think too many films have such tracks today even though no conversion is required to run these different types of sound track through a conventional projector.

Superb sound quality is obtained from magnetic soundtracks and, believe it or not, there have been many Australian theatres equipped for this multi-track mode for close on 30 years. Alas, 35 mm films with magnetic sound are almost non-existent today, however those that are released in 70 mm are totally magnetic with up to six usable tracks. I used to smile at such a great technical effort being poured into a single four inch drive-in theatre speaker at one theatre I worked in.

Even the most antiquated theatre equipment can achieve some pretty impressive sound results and it is often by a combination of traditional acoustic materials, large speakers and the favourable signal to noise ratio acquired via the high speed that the film passes through the sound head - 90 feet per minute with the 35 mm and even faster with 70 mm.

Since I began showing movies 27 years ago, I have worked in some 17 cinemas and drive-ins and, despite much of the equipment having been manufactured before I was born, I have never had a photo electric cell fail on me. There were, however, plenty of disasters. Most of the theatres I worked have now been torn down or converted to uses such as Chinese food halls, although I see from the newspaper advertisements that one or two have survived. **ar**

TELL
THE ADVERTISER
YOU SAW IT IN
AMATEUR RADIO

Tearing The Hair With A Yaesu FT-7

Eric Brookbank VK2EZB
115 Myall Road
Cardiff 2285

I have heard it said that experience is the best teacher and no doubt this is true. Of course, the one who said something similar about patience wasn't fixing a faulty FT-7. The fault in my FT-7 plagued me over a period of two years. It usually appeared after about 10 minutes on air and would then disappear just as quickly. The fault took the form of frequency instability. Sometimes no more than a few Hertz either way and other times the frequency would jump upwards a few kilohertz and then revert back to the correct frequency. At other times, the signal suffered a 'picket fence' effect on both transmit and receive.

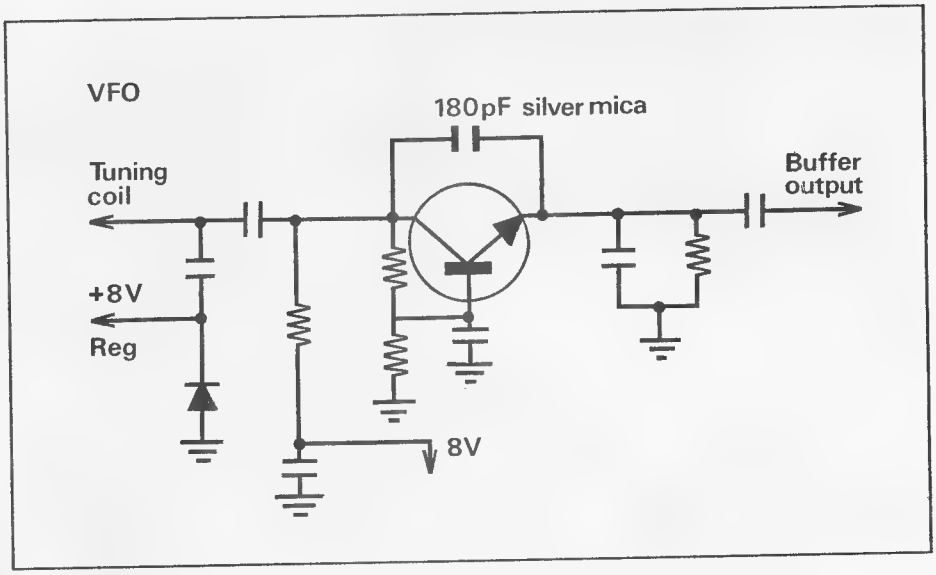
The plug-in boards were all removed and the contacts cleaned but to no avail. Voltage regulation was thought to be the problem but proved to be a non-event. In fact a whole range of options tried proved to be dead ends. Then during a bout of trouble-free operation, the rig decided to do its boldest act yet. Both the transmitter and receiver ceased operation. Only rapid switching of the band selector fixed the problem. It appeared as though it might be dirty switch contacts, so the wafer switch was treated with tuner cleaner. The receiver played merrily for the rest of that day but it then proved to be another wild goose chase.

The next time the radio failed it was noted that it was not completely dead as some noise was detected from the speaker. This gave the impression that something was amiss in the mixing sections. Probing around the common circuits (pre-mix, mixer, local oscillator and VFO) all caused the equipment to operate correctly again. Something was sensitive to pressure or short bursts of voltage. There were plenty of non-events in these sections also. Even soldering many believed dry joints didn't solve the problem. The results were always the same, joy for a while and then back to the drawing board.

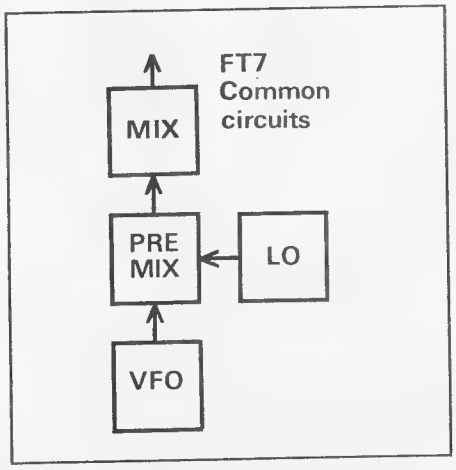
The trouble had to be in one of these common circuits. Signals injected into the premix and mixer circuits proved these circuits to be working OK. This narrowed the search down to the two remaining common circuits (local oscillator and VFO). "Please, not the VFO!!!"

Now I needed a frequency meter, and not having one I visited Col VK2KNN. This visit proved worthwhile. The local oscillator was proved to be spot on, which left the dreaded VFO. The output from the VFO was erratic and sometimes dropped out completely. Another chase for dry joints in the VFO didn't solve the problem. Next suspects were the FET and transistors. The FET was hard to get, so just the two transistors were tried unsuccessfully. Back to square one. I decided to go back to the basic theory. What type of oscillator is it? The manual says it is a Colpitts. What does that 180 pf silver mica capacitor between the collector and emitter do? It provides positive feedback (the flywheel effect) and sustains oscillation. The capacitor was replaced and positive joy (excuse the pun) was experienced. What a devious fault it had proved to be. As was said at the start, experience is the best teacher, but in this case what drawn out homework.

Three months later and the rig is still operating perfectly. I might even go on the air again shortly. ar



FT-7 VFO circuit



FT-7 common circuits

Don't Forget

Amendments for the 1990 Call Book must be at the Executive Office by August 21, 1989.

Low-Noise Microphone Pre-Amplifier

Ivan Huser VK5QV
7 Bond Street,
Mount Gambier 5290

This low-noise microphone pre-amplifier can be used to increase the signal from a low output low impedance microphone to a level suitable for use with most transceivers.

Many microphones are notorious for having a very low output and so some pre-amplification is often needed to allow them to effectively drive a transceiver. This was the case with a very nice Racal headset which I was lucky enough to pick up cheaply from a disposals source.

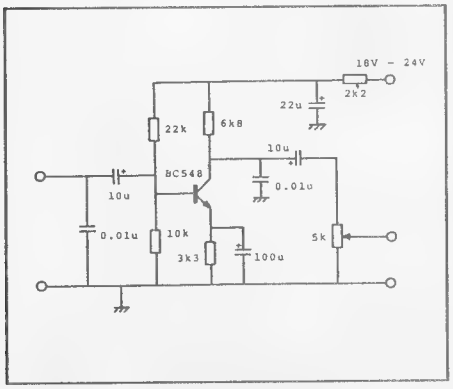


Figure 1 - Circuit of pre-amplifier

Problems

When extra amplification is added to the microphone circuit of a transceiver, several problems can be introduced. One of the main concerns being, of course, RF feedback.

If the shack is "clean", this will be minimal and all that may be necessary is to build the pre-amplifier in a good quality metal box and use a battery supply enclosed in the same box. The problem now is to remember to turn off the batteries when not in use.

This pre-amplifier in its bread-boarded form has been used right alongside the rig running 400 watts PEP without any sign of RF feedback. However, suppression capacitors have been included on the input and output just in case.

Another problem that often arises is noise. This is generally a pronounced hiss produced by the current flowing through both the active and passive components of the circuit. By using high quality components and close impedance matching of the input circuit, the hiss can be reduced to an almost undetectable minimum.

When the pre-amplifier is operated from a rectified and filtered power supply, the filter capacitor can contribute greatly to the noise problem. Decoupling of the supply rail will generally be an effective cure for this. If operated from batteries, the R-C decoupling components shown in the circuit may be omitted, in which case the supply voltage should be limited to 18 volts.

Operating the pre-amplifier from an AC supply may also increase the possibility of RF feedback and the creation of hum loops. Both of these problems can be overcome by the use of sound construction practices.

Due to the very low level signals being processed, any AC supply must be extremely well filtered, and preferably regulated using a three terminal regulator. A suitable circuit is shown in Fig 2.

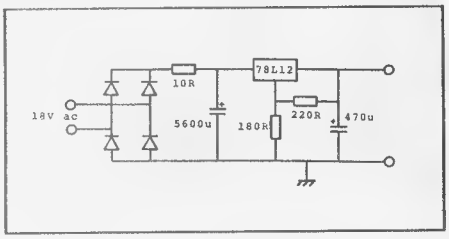


Figure 2 - Three-terminal regularor

Components

Unlike their early counterparts, modern small signal silicon bi-polar transistors produce comparatively little noise if used in the right type of circuit. Almost any general purpose transistor such as the BC548-BC549 series should be suitable.

A good idea is to feed the output of the completed pre-amplifier, with microphone attached, into a tape recorder and substitute various transistors to compare the noise levels produced. This is probably easiest done at the breadboarding stage.

To minimise the noise, resistors should be metal film types although cracked carbon resistors would be acceptable.

Polarised capacitors should be tantalum where possible, and room has been allowed on the PCB for two 47 µF tantalum capacitors in parallel for the emitter bypass. The 0.01 µF capacitors are disc ceramic.

If the 5k gain control is mounted on the printed circuit board, a cermet type preset is probably the best choice.

Construction

As a guide to construction, a suitable PCB pattern is given in Fig 3, but the layout is not critical and may be varied as required.

If the problem of RF feedback is encountered, then try constructing the pre-amplifier on double-sided board using one side of the laminate as a groundplane with the components mounted on the track side rather than through the board.

If all else fails - clean up the shack!

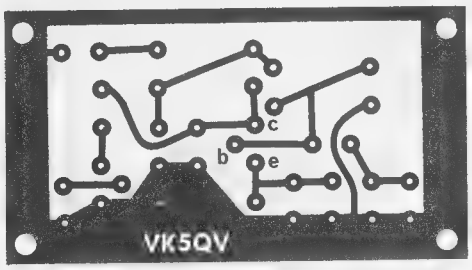


Figure 3 - Printed circuit layout for pre-amplifier

Component List

Resistors
1 x 2k2 metal film
1 x 3k3 metal film
1 x 5k6 metal film
1 x 10k metal film
1 x 22k metal film
1 x 5k cermet trimpot

Capacitors

2 x 0.01µF disc ceramic
2 x 10µF tantalum
1 x 22µF electrolytic
1 x 100µF electrolytic (see text)
Transistor
1 x BC548 or similar (see text)

Specifications

Voltage gain (Av) > 100
Gain (G) > 40dB
Input impedance 1k5
Output impedance 5k

ar

RF Impedance Measurement Program

J Hodkinson VK2BHO
Box 511 PO
Wollongong 2500

```
100 REM RF IMPEDANCE  VECTOR CALCULATIONS
110 REM TO DETERMINE "J" TAKE SECOND SET OF READINGS AT A HIGHER FREQ.
120 REM IF THE "J" VALUE INCREASES THE "J" FACTOR IS POSITIVE
130 REM RS = SERIES SENSE RESISTOR VALUE CHANGED IF OTHER THAN 100 OHMS USED
140 RS=100
150 CLS : PRINT :PRINT " RF IMPEDANCE VECTOR CALCULATOR  ver 2.0   VK2BHO 1989 "
160 PRINT:PRINT " INPUT ------ METER READINGS AS MEASURED AT TEST HEAD "
170 PRINT : INPUT " A READING ";A : IF A=0 THEN 170
180 PRINT : INPUT " B READING ";B : IF B=0 THEN 180
190 PRINT : INPUT " C READING ";C : IF C=0 THEN 190
200 IF (B+C)<A THEN GOTO 470
210 X=(RS*A)/B :Z=(RS*C)/B : Y=RS
220 CO= ((( A^2+B^2 ) -C^2) /( 2*A*B))
230 GOSUB 420
240 R=(X*CO)-Y : IF R <= 0 THEN 470
250 JA= ((Z^2)-(R^2))
260 IF JA <= 0 THEN 280
270 J = SQR ( JA )
280 IF J <= .5 THEN J = 0
290 IF R > (RS*50) THEN GOSUB 550
300 IF R < (RS/50) THEN GOSUB 550
310 IF Z < (RS/50) THEN GOSUB 550
320 IF Z > (RS*50) THEN GOSUB 550
330 REM CALC FIN
340 PRINT :PRINT :PRINT  "LOAD --- COMPLEX IMPEDANCE =  ";Z; " OHMS"
350 PRINT :PRINT  " RESISTIVE ELEMENT = " ; R; " OHMS"
360 PRINT :PRINT  " REACTIVE  ELEMEMT = " ; J; " + OR - J  OHMS "
370 IF A=B+C THEN  PRINT :PRINT   " NON REACTIVE LOAD  AT THIS FREQUENCY "
380 PRINT : PRINT :INPUT "ENTER NEW VALUES  ( N )   EXIT  ( X ) ";QS$
390 IF QS$="N" OR   QS$="n" GOTO 100 :IF QS$="X" THEN PRINT "END"
400 IF QS$="X" OR QS$="x" THEN PRINT "PROGRAM TERMINATED BY OPERATOR":ELSE GOTO
    380
410 END
420 REM TEST CO
430 IF CO=1 GOTO 460
440 IF CO.> 1 GOTO 550
450 IF CO > 0 THEN 460'ELSE 470
460 RETURN 240
470 REM ERROR MESSAGE
480 PRINT :PRINT
490 PRINT "   ****  DOES NOT COMPUTE   ****  WITH THE READINGS PROVIDED"
500 PRINT :PRINT " CHECK READINGS AND REMEASURE IF NECESSARY "
510 PRINT :PRINT " RULES ****    B + C MUST > A   ,  B OR C MUST NOT > A  "
520 PRINT :PRINT "                IF  B = ZERO  THEN  LOAD IS O/C
530 PRINT :PRINT "                IF C = ZERO THEN LOAD IS S/C "
540 GOTO 380
550 PRINT :PRINT "CHECK LOAD / READINGS AS CALCULATIONS ARE SUSPECT ----***"
560 PRINT :PRINT "CALCULATIONS INDICATE A MORE APPROPIATE SENSE RESISTOR VALUE M
AY BE NEEDED"
570 RETURN 330
```

Version Two

Following my "RF Impedance Measurements" published in April 1989 AR, the program shown at left is an updated version. It is much simpler and gives more accurate results.

(For those who prefer to use a calculator, the following fomulas are offered :

$$Z = \frac{C.RS}{B}$$

$$R = \frac{RS(A^2-B^2-C^2)}{2B^2}$$

$$X = \sqrt{(Z^2-R^2)}$$

See also letter by Ray Hinks VK4LU on page 60 - Ed.)

Continued from page 8

(10,000 MHz band) would be the most technically challenging project.

It is worth noting that the combination of digitised video and frequency modulated transmission has the potential to give significantly better results than the present analogue - amplitude modulated system. Some might argue that the 24cm and 3cm carriers are little used in Australia in comparison with the British, where there are several repeaters in the 24cm band. Therefore, why bother with construction for use in those bands? A check of the 1988 WIA Call Book shows that UHF and SHF bands are there to be used - yet another challenge for us.

After reading the ATV Compendium, many of us may become uneasy, or perhaps guilty, that we are not investigating new techniques, nor experimenting in the time-honoured Amateur spirit. An old-timer remarked that the Amateurs in the past showed the professionals how to use the bands, which were then taken away from them and given to the professionals!

Well, the Compendium reveals that there is plenty of opportunity for Amateurs to show the way forward. It is an excellent guide, worthy of inclusion in the Amateur technical library.

Enquiries can be made directly to : BATC Publications, 14 Lilac Avenue, Leicester LE5 1FN. ar

VNG Plans Moving Ahead

The provision of a standard frequency and time signal service is considered by 21 other nations to be a normal service like the provision of roads, telephones and a postal service.

Thanks to the VNG Users Consortium, the revived VNG service is set to ensure Australia continues to provide such a facility.

Telecom Australia operated the service from Lyndhurst in Victoria, but closed it down, claiming a number of reasons including its cost. However, not wanting to see the service disappear, the Consortium worked hard, which led to the imminent full resumption of VNG transmissions.

On-air tests have been conducted and final approval was expected from the Department of Transport and Communications for VNG, now located at Llandilo, NSW, to transmit on 5 MHz, 10 MHz and 15 MHz. In the long term, the 10 MHz outlet will be continuous, except for brief maintenance periods, while 5 MHz will run 0645-2200 UTC and 15 MHz will transmit 2200-0900 UTC. Reception reports to the VNG Users Consortium, GPO Box 1090, Canberra ACT 2601, will be acknowledged with a QSL card.

Responsibility for VNG has now been accepted by the Australian Surveying & Land Information Group of the Department of Administrative Services. ar

Tales of the Unexpected

David G. Barneveld VK4BGB
PO Box 275
Booval 4304

You are about to enter the outer limits. The beginning of the end. The forces have full control of your body. Do not attempt to push any button on your rig. Do not turn over this page. Slowly and steadily the throbbing noise of the creature gets nearer. Advancing steadily as it senses the heat of your body. Any minute now it will be here.....Aaaaaaaaaahhhhhhhh!!!!!

Stop! Wait! What's this? Has everyone gone crazy? Has AR branched into writing science fiction stories in order to make a quick quid? Heaven forbid!

At first glance you may be pardoned for thinking that this is the case. However, the theme of this article, whilst having nothing to do with amateur radio, should provide a little bit of laughter, providing one can look on the funny side of the story, and also educate many amongst us to the fact that nothing is as it seems at first glance.

The story to be told is of a near-typical work day I experienced some eight years ago, in the operations section of a medium sized thermal power station. I arrived at work one morning and relieved the operator from the previous shift in the firing aisle of number three boiler house. These firing aisles each comprised four Babcock and Wilcox stoker fed, coal fired, water tube boilers. For the steam buffs among us, of which I am one, each boiler was rated at 650 psig, 160,000 pounds per hour, and at 950 degrees Fahrenheit final steam temperature.

A pair of these boilers each fed one Parsons 30 Megawatt steam turbo-alternator via a common steam range system. In the incident that I am about to reflect upon, firing aisles one and two, which were identical to number three, were inoperative at the time, and maintenance was being carried out on boilers one and two in firing aisle one. These boilers were almost stone cold as they had not been used for some days.

Maintenance

Shortly before morning tea, I was approached by the maintenance foreman and asked if I would be kind enough to start an induced draught fan on boiler number one and crack the damper open just a whisker to allow a flow of cooling air to pass through the boiler draught passages. For those not in the know, the induced draught fan sucks the products of combustion out of the boiler and forces them into the chimney for dispersal to the atmosphere. It is usually married up with another fan known as the forced draught fan. This fan does the opposite and forces air into the boiler to aid the combustion of the fuel.

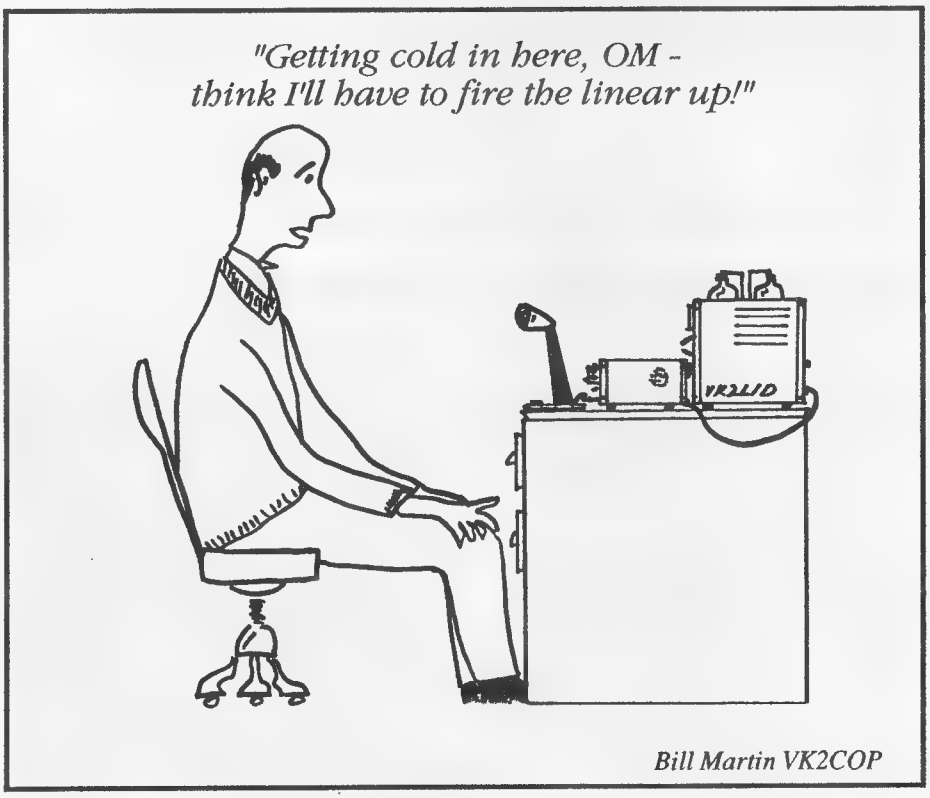
Seeing no problem with this request, I told my offsider that I would wander over and run this fan up to keep the boys happy. This fan incidentally, is driven by a 250 horsepower electric motor, coupled to the fan by a hydraulic fluid coupling. Speed regulation is achieved by varying the scoop position in the coupling via a pneumatic ram, controlled from the boiler firing console.

Upon arriving in firing aisle one, I walked over to the console and opened the appropriate dampers associated with the induced draught fan. Depressing the motor start button I watched the ammeter rise to full scale as the starting current took effect, and then drop off as the motor came up to full speed. This achieved, I then wound up the air control pilot valve on the pneumatic ram, and, watching my furnace draught gauges, anticipated a fall in furnace pressure as the fan came up to controlled speed. However, not so! In fact, nothing happened. The control by this stage had reached the 100% mark. Suspecting something amiss, I jumped into the lift to the top of the building to investigate the problem.

Actuator

Reaching the roof, I walked over to, and climbed down, the ladder into the fan bay situated below the chimney stack. Now to the task of finding out what was wrong. Could it be a stuck actuator? Broken control line perhaps? No, none of these. The cause of the problem turned out to be accidental sabotage.

It appears the fitters when working on



the fan a few days earlier, had isolated the air supply to the pneumatic speed control actuator. Here was the cause of the problem. Opening up the control air brought an immediate response. Actually, a very large response!

As the control valve downstairs in the boiler house was still at 100%, the pneumatic ram proceeded to rack itself out to full throttle at an enormous rate of knots. With a powerful drone, the fan came up to full speed and settled down at that.

With success in the back of my mind, I headed over to the lift and proceeded back down to the firing aisle to drop the fan speed to a comfortable level. From there I would go and join the rest of the troops for some morning tea. Or so I thought. As the lift doors open directly into the boiler house, you can imagine what a shock I got as I stepped out of the elevator and was confronted with five rather shocked and filthy negroes doing some sort of tribal ritual dance on the floor beside the boiler firing console. The words they were chanting were meaningful, but unprintable!

To cut a long story short, it appeared that the five negroes happened to be five of the maintenance fitters who had decided to have an early morning tea break (one that the foreman was not aware of) and the best place to do this was on the wooden planks that had been placed in the economiser section of the boiler a couple of days beforehand by the mechanical section.

So, there they were! Five sitting ducks, complete with makeshift table, 240 volt safety lamps, good tucker and a pack of playing cards. The only thing missing was the gentle breeze about to be supplied by the duty boiler attendant. Yes! Yours truly.

Cyclonic Disturbance

It is not hard to visualise the scene at that table, when, instead of a cool breeze, something that resembled Cyclone Tracy, complete with every bit of dust, dirt, and grit that it could find on its travels, smashed its way through the economizer tube banks where our friends (they were up till that point) were sitting. Sheer chaos must have reigned. I was told a couple of days later, that the record would have been broken in the Guinness Book of Records for five blokes trying to squeeze through an entry door about two feet square all at once. I'm only sorry that I missed seeing it. The motto of this story, I believe, is, although things may appear OK to start with, it sometimes pays to double check, lest you or somebody else gets caught.

In this case, the fitters got caught by doing something that they were not supposed to at the time, and I got caught by not checking the personnel situation before running up the plant. Let's hope that you do not get caught like these chaps.

Incidentally, the fitters never did disclose who had the best hand when Cyclone Barny struck! ar

Down at Moorabbin

Ken Gott VK3AJU
President

Having recently assumed responsibility for distribution of VK3 inwards QSL cards, the Moorabbin and District Radio Club looks like being an even greater than usual hive of amateur activity.

The club is trying out a new idea in the form of a Book Night. This will be an opportunity for members and others to buy, sell, and swap books and magazines relating to radio and electronics. However, there will also be a centre-piece in the form of a display of the latest editions of publications of the ARRL and other overseas manuals by a leading importer. These will be on sale at special discount prices. The Book Night will be on Friday, September 15.

On the evening of August 18, the club will be addressed by Graeme VK3NE, VK0NE. Graeme went to Macqaurie Island in December 1987 on the last, ill-fated voyage of the Nella Dan and worked there for a year as radio and radar technical maintenance officer. During this year on the island, he was not only active as VK0NE, but used his camera to good effect. His talk will be illustrated with slides of scenes and activities on Macquarie. ar

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Down Memory Lane

Joe Ellis VK4AGL
Burnside Road
Nambour 4560

Joe Ellis VK4AGL circa 1942

In the March issue of Amateur Radio I read with interest the article on the resuscitation of VNG and that the voice announcement was done by VK2BL, Graham Conolly. Most people would be aware of Graham as a newsreader on ABC radio stations, but might not be aware that he was a Radio Officer at sea during World War Two.

Graham and I sailed off together in the Motor Vessel "Malaita" in August 1942, and on the return trip were torpedoed by a Japanese submarine off the cost of Papua-New Guinea. It was a fine Saturday afternoon and everyone was feeling super safe as we had a brand new destroyer, the HMAS Arunta in attendance. I was dressing for lunch when the explosion occurred directly under my cabin, tearing a twenty metre hole in the ship's side. I hurried up to the Radio Office just in time to be ordered to abandon ship. The Chief Radio Officer appeared to be uninjured although heavily stressed (he died in the Wahroonga Sanatorium some weeks later), so I grabbed the radio code books in their weighted canvas bag and went to my appointed lifeboat which was already launched. Graham went off to his abandon-ship station also. During the row back to Port Moresby we picked up the ship's cadet clinging to a life raft. He had been the only member of the crew who had seen the torpedo coming and had run through the bridge and jumped overboard!!

The MV Malaita, although on fire, did not sink and later in the day we mounted a rescue mission with a coastal steamer and towed her back to Port Moresby. She spent the rest of the war tied up at a wharf in Sydney, and was subsequently scrapped.

MV Malaita - later torpedoed off PNG

My orders were to assess the damage to the Wireless Office and then find my own way back to Australia which I did by hitching a ride in an American Flying Fortress to Townsville. I never did see either of my fellow radio operators again, but I am glad to learn that Graham VK2BL is still in the land of the living. I am sure that he, like myself, finds pleasure in remembering the years spent at sea; it was a period of high excitement and adventure.

Incidentally, I still show interest in marine radio traffic and these days copy the Amtor traffic on 13 MHz. ar

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TELL
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More of Cyclone "Orson"

Ray Gray VK6RQ
160 Hardey Road
BELMONT 6104

On the evening of 22nd April '89, I received a telephone call from Bob Walker VK2YRX who was in Alice Springs. He informed me that a cyclone watch was being arranged as a consequence of Cyclone Orson which, at that time, was situated near the coast of north-west Australia, and approaching the Karratha/Dampier area, moving south at 25km per hour. At that speed, and assuming it held course, the time of crossing the coast was approximately 5am WAST.

He had informed the police in Karratha, Dampier and Onslow of the availability of amateur radio operators, who could render assistance, if required, through IARN. This would take the form of sending and receiving health and welfare traffic between the disaster area, and the general public requesting information about relatives and friends.

This proposal was accepted by the police. It would take the load off the telephone lines, and leave them free for official use. At Bob's request, I phoned the State Emergency Services here in Perth, and informed Chris Robins of the arrangements made, and offering the assistance of the radio amateurs if necessary, also giving him the frequencies on which we would operate – 14275, 7070 and 3570 kHz.

Having done this, I contacted Sam VK2BVS in Sydney, and confirmed the operational details. He gave me a list of amateur radio operators in the area who could give assistance. These were VK6AJR Exmouth, VK6ZW Karratha, VK6NTE Onslow, VK6BDE Karratha. At 2030 WAST, the net went to a listening watch in order to obtain some sleep. The local broadcast stations were putting out hourly bulletins on the progress of the cyclone.

Watch was opened again by VK6RQ Ray at 0500 WAST on 23rd April, and contact was established with VK2BVS Sam and VK6ZW Peter. Peter had opened watch at 0300 WAST, and reported that ,through his window, the winds were very strong, and that a tree had been uprooted from his garden and was lying across the fence between his and his next door neighbour's gardens.

At 0700 WAST, I telephoned the ABC in Perth and requested that, via its radio stations, it inform the general public that police had requested all health and welfare messages be sent and received by amateur radio, and to contact VK6RQ (telephone number supplied) who would endeavour to meet the requests.

Cyclone "Orson" crossed the coast between Karratha and Dampier. The time? Well, I have heard many different estimates; but, one thing is certain, it was the early morning of 23 April. High winds were experienced as early as 2am, as far inland as Pannawonica.

At 0730 WAST, my telephone started ringing, and continued to do so all the morning and into the afternoon. My daughter took charge of the inquiries. She was able, from the information from the broadcast stations (which were issuing bulletins every hour), and the information collected on the net from Peter VK6ZW, to advise enquirers that there were no reported fatal casualties, although there was extensive damage and possibly minor injuries. A total of 10 messages were originated during the morning, and none during the afternoon.

Peter took the opportunity to go QRT to inspect the damage at his QTH, and to get some sleep. He had been on air for 15 hours.

Before going QRT, he had sent replies to all but four enquiries. Two of these were addressed to Pannawonica, and he was unable to get through. The telephone lines were down, and there was no radio amateur in the town who could be contacted, the last one having left some time ago.Sam VK2BVS also went QRT around this time, and his place was taken by VK2DTN. The frequency was kept open, with periodic calls inviting traffic and enquiries to the net. Among the callers were VK6BU John, VK6ATS Graham, VK6AB Kevin, VK6QG Tony, ZL2ART John. Also VK6BKC/M Ken, who was on holidays with his wife and family in the Kalgoorlie area, so naturally he was interested in the latest position reports. They are now back in Perth safe and sound, and thinking of taking off again to resume their holiday.

When Peter resumed watch, we checked outstanding traffic, and only two required replies, plus the two which were still on hand for Pannawonica, and could not be delivered.

Of the other two, one was "safe and sound", and the other was unable to be contacted - the phone was ringing but not being answered. He therefore went to the address, but no one was at home. The next-door-neighbour informed him that the person concerned had not been home the previous night as well.

All traffic being accounted for, a listening watch was kept until 2030 WAST. As the cyclone was now well to the south in open country, no further enquiries or traffic were taken.

I was pleased to be in a position to render assistance to the public and hope that in some small way our efforts relieved its anxieties and fears. ar

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Putting Up an Antenna Tower and Antenna

Tony Williams VR2DJW
PO Box 131
Wahroonga
2076

So – you want to put up an antenna tower? How do you go about it? Here goes with the practical experience of one amateur, in nice easy steps:

1) Before you buy the beam and tower , talk to your immediate neighbours, get their verbal permission. Not playing speaks? You DO have a problem (but see later). They cannot make up their minds? Again, see later.

They give verbal permission (hopefully your Minister for Home Affairs is with you when they give permission – as a witness, of course).

2) Make up a plan and approach your local council for a DA (Development Application -mine cost $5) and then return to your neighbours and obtain their signatures, either on the back of the DA (my council had a special rubber stamp) or on a previously made-up, suitably worded letter to the council.

3) After obtaining the required number of neighbours' signatures (ha, ha), you return the DA to the council and wait (and wait) for its official approval.

4) After receiving council's written approval, comes the easy part – find a suitable tower, erect it and festoon it with the appropriate antennas (I've seen one small backyard which looked like a Russian spy ship!)

5) Your neighbour/s will not give you permission, either verbal or in writing? You now do have a problem. Find out what their objections are, and quietly – without any rancour – counter them with logic and truth. Still have a problem? You now have to approach the local council.

VERY IMPORTANT: Before approaching the council, you must do some homework.

a) Dig out ye olde trusty box Brownie and photograph similar antenna layouts to your proposed layout within your council's jurisdiction, which have been approved by council (see the amateur first to get his OK). Put a film in the camera first, silly.

b) Talk to amateurs in the council area to see what their traumas were (if any) and how they got over them.

c) Join WICEN, get involved with Scouts or Guides, help with JOTA (every October). Even join the SES (State Emergency Services). ie, show that you are community oriented – you may also enjoy yourself!

d) Find out the names and addresses of your local councillors. Write a short treatise on what is amateur radio; why a tower; 'break through' and the neighbour's recourse to DOTC.

Also, about yourself, that you are community minded (like the local councillors), that amateur radio is your hobby, that is has proven to be of inestimable assistance during natural disasters (Darwin, Mexico City, bushfires etc), that it has been, and is, a fantastic medium for making friends with people overseas, that people of high and low status (monarchs and yourself, for example) indulge in the hobby. If applicable, stress that your current set-up is not as efficient as a tower plus the super-dooper Yagi you want to erect. Incidentally, if you have an upset neighbour and you are causing him TVI/RI etc, STAY OFF THE AIR until you have got council permission – no sense in upsetting him any further (he may decide to take up a petition against you, and that does make the problem decidedly harder).

e) Go to see each of your local councillors, especially those in your Riding. Give them each the paper you have so carefully prepared, and talk to them about the good things in amateur radio.

Be truthful and say that if breakthrough is being caused by you that you are quite willing to help the neighbour with the problem. That it will probably all go away anyway, when you put up the tower and antenna.

6) Now approach council with your application and ask the council officer when the application will be put before council, as you wish to be in attendance at the meeting so that if council wants any more information you will be able to supply it.

7) Pray! ar

RAEM Calling

Tony Smith G4FAI

Reprinted from 'Practical Wireless' Jan 1988, contributed by Stephen Pall, Box 93, Dural 2158.

Ernst Krenkel was a famous Russian radio amateur whose exploits in the 1930s are depicted on a commemorative QSL card used by many Russian amateur stations today. Some recipients of the card will know that he was an Arctic explorer/radio operator who played a vital part in a Polar rescue. Some may also know that he was honoured by the issue of a special postage stamp in 1973, that the Central Radio Club of the USSR is named after him and that he was allowed to use a special callsign unlike that of any other Russian amateur.

In July 1933 Krenkel was chief radio operator on the *SS Chelyuskin* under the command of Prof Otto Schmidt who had special responsibility for opening up the shipping lanes through coastal waters north of Siberia. Unfortunately, like so many of her predecessors, the *Chelyuskin* became trapped in the Arctic ice and her plight eventually became world headlines. Ships have survived this ordeal before and, to start with at least, it was just a question of waiting through the winter until the thaw set in. In 13 February 1934, however, disaster struck. The ship was crushed by the ice pack and sank in the Chukchi Sea off the north coast of Siberia. The survivors, some hundred men, women and children, fled to the ice with such supplies as they could take from the sinking ship. Krenkel's own personal QSL card shows the dramatic

scene.

For nearly two months, in Polar darkness, the survivors remained on an ice floe, with Krenkel's radio their only lifeline to the outside world. Fissures began to appear in the ice, and desperate plans were made to send in Russian Air Force planes to effect a rescue, something which had never before been attempted in the Arctic region.

Three aircraft were used, and the daring rescue attracted worldwide interest. On April 13, the last six people, plus eight dogs, were airlifted to the rescue base at Cape Vankarem, some 483km away. The Soviet Government instituted a new title on April 16 - Hero of the Soviet Union - the highest personal award that could be made to anyone, and the first recipients were the three young aviators who had rescued the *Chelyuskin's* expedition.

For his part, Ernst Krenkel was also awarded a high honour and was allowed to take the *Chelyuskin's* call, RAEM, as his personal amateur callsign, a privilege which has never been bestowed on any other Russian operator. He had been trained as a wireless operator in 1920, and first worked amateur stations from the Arctic in 1927 when he was based in the northern island of Novaya Zemlya.

In January 1930, when based in Franz Josef Lane, he established contact with Admiral Byrd's expedition in the Antarctic, on 7.4MHz (42m), using 250 watts. This was literally from one end of the globe to the other and was the first time such a contact had been achieved.

For some years after the *Chelyuskin* the idea has been debated of setting up a scientific station on a drifting ice floe in the Arctic Ocean. The man charged with bringing this idea to reality was Otto Schmidt. A base station was set up on Rudolph Island, north of Franz Josef Land, and on 21 May 1937, the world was astounded to learn that an expedition had been landed at the North Pole by air. Four four-engined aircraft equipped with ski runners flew over 10 tonnes of supplies to the Pole. Schmidt, with a supporting party, stayed there for 11 days. They then departed with the aircraft, leaving four men and a dog on the floating station. The leader was Ivan Papanin, and other members were Peter Shirshov and Eugene Fedorov, both scientists, and Schmidt's old radio operator from the *Chelyuskin*, Ernst Krenkel.

The first activity on May 21 was the setting up of the expedition's wireless station and the initial signal was put out that day using the callsign UPOL, which was to become internationally famous in the months ahead. The main purpose of the expedition was to carry out a wide range of scientific observations as the floe drifted southwards and, of course, the radio's main purpose was to communicate all findings to base on Rudolph Island immediately they were available. Four weather reports were sent daily, and all members of the party were commissioned to write and despatch articles on their experiences to various newspapers and magazines. All of this, coupled with personal traffic for each member, plus official business, kept Krenkel very busy. Yet, at various times he also managed to communicate with amateur operators in many countries.

The first amateur contact was on June 24 when he worked a station in Aalesund, Norway, and he was then hopeful of soon establishing contact with amateurs from his own country. He had already announced that his own receiver, which he had lodged with the office of the journal Radiofront, would be presented to the first USSR station to work him on UPOL. In the meantime, other amateurs worldwide were clamouring to make contact with him. On June 26 he worked stations in France, Brazil, Hawaii and the USA. By July 3 he had established contact with the USSR, and worked other amateurs in Norway, France, England, Ireland, Iceland and North America on that day. He also managed to work South Australia on September 7.

His transmitter power was only 20 watts, with an antenna that was 76 metres long, strung between two masts. His basic power supply came from accumulators which were charged by a wind generator. When there was no wind and the accumulators were flat, there was a standby "bicycle" generator which took two men to operate, using hands and feet, so that on those occasions only the most essential messages were transmitted. There was also a standby petrol generator, but this was rarely used because of the need to conserve fuel in case of a genuine emergency.

Much meteorological data was collected as the floe began its long drift to the south as the Soviets were very interested at the time in the proposed Polar air route between Russia and the USA. During June the first flight took place between Moscow and Vancouver, passing very close to the Polar station in the process. Less than a month later, in July, a world record non-stop, non-refuelling flight of 10,077km followed the same route and landed in San Jacinto, California, 62 hours after leaving Moscow. Then, in August, a polar flight went missing in the Arctic. The expedition was put on alert to prepare an airstrip on the ice in case it was needed by rescue aircraft, and Krenkel spent many long hours monitoring the aeronautical frequency in case help was required.

By early December they were nearly 1287km from the Pole, and fast approaching the danger line of latitude 80°N. Here the floes begin to crumble and break up before sweeping down the east coast of Greenland. Cracks were beginning to appear and the party was preparing to move to find firmer ice if necessary. Conditions became appalling. In the darkness of the polar night there were violent blizzards, continual movement of the ice pack, and heavy snowfalls.

The radio antenna had to be re-erected several times in the teeth of fierce gales, and in the sub-zero conditions they had to repair the wind generator. On February 2, the camp had to be moved, together with all supplies, away from dangerous fissures threatening to split the site in two.

All this time, meteorological, hydrological and other scientific observations continued to be made. Krenkel kept at his transmitter to ensure everything was recorded at Rudolph Island and to maintain contact with the ships now coming to their rescue through the icefields.

At one point, the radio equipment was mounted on a sledge and operated in the open air ready to be moved to safety at a moment's notice. To operate his telegraph key Krenkel had to use bare hands so he could manage this for only 10 minutes at a time; the conditions under which he worked can be imagined. As they drifted further south, contact with Rudolph Island became difficult, and messages were then relayed through the approaching ships or through the Norwegian radio station on Jan Mayen Island.

They were finally rescued by the icebreakers *Murmanetz* and *Taimyr* in the face of many difficulties on 19 February 1938. The solid ice, which had measured about two by four kilometres when they started, and on which four large aircraft had landed, now measured about 30 by 10 metres.

They had drifted 2510km and had arrived off the east coast of Greenland. All the scientific equipment was saved, and before the transmitter was removed, Krenkel sent a final message saying the North Pole station was being closed down in latitude 70° 54' N, longitude 19° 48' W.

It was all over, but it was not forgotten. The party returned in triumph to Moscow and all received important decorations and rewards for their success. Ernst Krenkel, Hero of the Soviet Union, was subsequently honoured by his country in several ways. He was an active operator on the amateur bands in the 1960s, and many stations round the world must have received his original and unique QSL card.

After a lifetime of remarkable achievement, he died on 8 December 1971. He had

been made President of the USSR Federation of Radio Sport in 1959; he was on the boards of the magazine of Radio and the publishing house Energiya; and he was head of the All-Union Society of Philatelists. He achieved his final ambition when he commanded an Antarctic research expedition in 1968/9, which travelled 51,000km. A gulf in the island of Komsomets is named after him, as is a Polar Geophysical Laboratory and a Communication Polytechnic in Leningrad. He was one of a breed of men, found in all countries, for whom achievement is measured in terms of personal qualities of skill, courage and endurance. Amateur radio itself is honoured by having had such a man in its ranks. ar

China Revisited

W Watkins VK4DO
PO Box 262
Airlie Beach 4802

Independent travel in China is the only way to see the country and to enjoy the pleasure of meeting people. So once again, this time accompanied by son David, I made my fourth visit to China. Apart from visiting friends in Changsha City in Hunan Province with whom we spent Christmas Day in their home, the other purpose of the visit was to renew old friendships with the Chinese Radio Sports Association (CRSA) in Beijing.

To my delight my good friend Wang Xun has been appointed Secretary General and Tong Xiao Yong, Chief Operator of BY1PK, is now his Assistant. The previous Secretary of CRSA, Huong Yonglian has retired, but he came along with me as interpreter.

It was a magnificent welcome that we received, even though my last visit was only two years ago. An invitation to operate BY1PK during the morning was accepted, however, 28 MHz was the only band open to VK. Stations worked included VK4KK and VK6RO. This was followed by a luncheon banquet of seafood. After the lunch there was a visit to BY1BJ which is under the large parachuting tower in the south east of Beijing. Our hosts there were Wang Xin Min and Sun Gui Hua. We returned to the hotel, the Tiantan Sports Hotel, which is opposite the office of the secretary of CRSA in Tiyuguan Road, (Room $23 per night) and only a ten minute walk from BY1PK which is located at the south east corner of Tiantan (Temple of Heaven Park). A second day was spent with Wang and Huang so we visited BY1BH and BY1SK even though it was snowing at the time.

BY1BH is located at the Childrens' Cultural Palace and with its colourful traditional buildings covered in snow it presented an eyecatching picture. The station overseer introduced us to three middle school operators, Sui Tian Shu (Diana), Niu Xiao Feng (Hunter) and Anna. They tried to raise a VK station for me but no luck as conditions were not good.

The station was started in 1988, has 30 members aged between 13 and 18 years, from middle schools in the area. At the Palace there are 60 groups active in arts, sport, science etc. This is a part time school where students come in their spare time of an afternoon, evening or weekend to pursue their individual interest. Equipment there is 757GX and a 4 element Yagi at 33 metres. So far they have made 300 contacts, 100 to VK and have worked 50 countries on SSB. Their English language is quite good, rather better than my Chinese.

The next visit was to BY1SK which is at the Beijing Science and Technology School. Students are encouraged to construct their own electronic equipment with emphasis on the technical aspect. The station manager and teacher, Kong, advised that the operation started in 1985 with SSB. CW and RTTY. Equipment is a 107DM and they have made 20,000 contacts to 80 countries. Kong teaches betwen 20 and 30 students from Grade 2 (14 to 15 years) who attend the school.

After a visit to Liulichang, a Hutong (narrow street) south west of Tiananmen Square, where rare books and curios are sold, we returned to BY1PK where we were feted once again to a banquet where we made more friends.

The next day we left Beijing for Guangzhou by train (38 hours).

Since my first contact with CRSA in 1982 I am now delighted with the progress that has been made with setting up of some 28 stations, 6 being in Beijing, and also the positive involvement of CRSA in the activities of IARU Region III affairs.

This development has been achieved through the various scientific and technological centres such as the one in Chongwenmen District in Beijing (BY1CKJ).

This centre for youngsters is located in an ancient building of the Ming Dynasty, the Temple of Long An. It is an after-school education unit that launches youngsters (middle and primary school) into scientific and technological activities. There are 45 teachers, workers and staff members. Its activities are: aviation, navigation models, electronics, radio direction finding, astronomy, earth sciences, and computers. As well, there are labs for phyics, chemistry, and biology. Every day it can admit 150 group members at the same time from more than 500 that take part in the activities. This centre will play a positive role in the whole development of the youngsters' moral, intellectual and physical education. ar

L to R Huang, Wang Xun - Secretary General CRSA, Wally VK4DO, Tong Xiao Yong, BY1PK, Wang Xin Min BY1BJ.

How Radio Came to Pitcairn Island

Contributed by Bob Lowry VK4FPO
22 Campbell Street
Rockhampton

This interesting story of how radio came to Pitcairn Island was written for the Pitcairn "Miscellany" by Andrew Clarence Young, an octogenarian who was born at the end of the last century and who is a direct descendant of Midshipman Edward Young, one of the original "Bounty" mutineers.

In 1921, Captain Hemming (who was the captain of one of the NZ Shipping Company passenger vessels) gave a card with Morse code on to the magistrate, Mr Fred Christian.

When Fred showed me the card, my interest in communication started. My uncle, Fisher, and my cousin, Percy, were also interested, so we made three copies of the code and started learning the dots and dashes. We practised in the evening by flashing sentences to one another down the main road. As we improved, we would sometimes go off to two mountains which were about a mile apart and flash messages. So far, so good. My idea was to stop ships passing at night time to take our mail.

Our first trial came when my uncle and I were in the leading boat. He asked the ship if it could stop for mail and it replied it could; and that was the first ship to be stopped by Morse.

News of our practising got to the Marconi Co, and it sent a small crystal receiver with dry batteries, which none of us knew how to connect up. Lincoln Clark tried and he thought the earth connection would have to go to the sea. Everything was set up to listen, but we heard nothing. After a long trial and hearing nothing, Captain Cameron on the "Remuera" sent his chief operator ashore to see if he could find the trouble. He went into the radio shack and asked me where my earth connection was. I said it led to the sea. He laughed, and said to cut it off and bury it under the building. After doing this, we began to pick up signals.

I continued listening and practising on a small buzzer. After a long time of trying to pick up ships' messages, the great big surprise came – I heard a ship. If I got the message right, the "Corinthic" was arriving at 7am the following morning. My friend rushed out of the radio shack calling "Sail Ho!" When the people heard the message, they began picking fruit. Oh my heart was pit-a-patting over whether it was the right message, and I couldn't sleep that night. Was I glad when the ship appeared on the horizon at 7am. And when I went on board and told the radio operator about it, he was as pleased as me to know that his was the first message to be received on Pitcairn Island.

From then on, messages were received at five words a minute, and I feel I was the first Marconi operator.

In 1928, a family came from New Zealand whose trade was building small wireless sets. They brought two car motors with them. One was put in our first motor boat, the other one they used to make a small spark gap transmitter for the wireless receiver. Ships could pick up signals from this 150 miles away. This radio helped me a lot in reading up to 10 words a minute. One operator told me my transmitter signal sounded like a monkey p...ing on a drum. I told him I didn't care how it sounded as long as it was received.

When the "Yankee" called in 1937, the radio operator stayed with my wife and me, and he was amazed at the set I was using. So he wrote an article in the 'QST' magazine. Then 13 different firms put in parts to make me a small ham set which was called 'Pitcairn Expedition'. In 1938, Lew Bellem and Granville Lindley brought the set to Pitcairn. They got a temporary ham licence for me from the WPHC, but then the war came and I had to close down.

Nelson Dyett was sent here for the duration of the war as part of the New Zealand Army team. Nelson stayed on as a radio operator after the war until Mr Long arrived. He didn't stay very long, for the power supply went off and he left. Once again, all the worries of radio contact were mine and Anderson's, until 1948. When the schoolhouse was built, the power supply was put in working order, and Anderson Warren, Floyd McCoy and I worked together. But Floyd was making so many mistakes that the Adviser gave him the weather reports to do, which left Anderson and me the other duties till Tom arrived from his schooling, and that was that. ar

The Great Victorian Bike Ride

Ted Borowiecki VK3DXK
WICEN Coordinator for the Ride

This bike ride travelled from Swan Hill in Victoria's north-west to Melbourne during December 3-11, 1988. It was not a race against time, but a ride that could comfortably be undertaken by a reasonably fit person.

Those taking part ranged from about eight years to 80, male and female, families, school groups and just friends out for a good, healthy time. A total of 4202 started off on the ride.

Participants reached Swan Hill by train or bus from all over Victoria, and some from interstate. Victoria's intrastate rail service, V/Line, advised that it was the largest movement of people by train since WWII.

The ride is run by Bicycle Victoria, a non-government organisation which aims to promote road safety, bicycle awareness and encourage the use of bicycles.

It took five semi-trailers to move the baggage each day. The riders consumed 11,200 litres of milk, 3200 loaves of bread, 144,000 bread rolls, six tonnes of meat, 1500kg of pasta, six tonnes of cereal, 68,800 pieces of fruit, 12 tonnes of vegetables and 700 dozen eggs.

WICEN had a vital role to play in the event. It passed routine traffic between the St John first-aid units, bike-ride officials

and police. At times, urgent messages of a medical nature, or on vehicle traffic, were also handled.

When radio conditions were not suitable for direct communication between St John units and police, WICEN provided a relay, through its net control station VK3WI.

Calls for the ambulance service were relayed to Melbourne, where St John station VK3SJB was manned by volunteers in the home of Les VK3BGW, who would phone Ambulance Service-Melbourne. There were over 2000 messages logged at VK3WI and four requests for ambulance attendance passed to VK3SJB.

The above gives a background to the ride, and WICEN's role. I will now go into the day-to-day activity of the event from the eyes of the coordinator.

Several months prior to the event, WICEN was asked to provide communications. This bicentennial year had two bike rides; the other ride being Melbourne to Sydney, which ran over 20 days, started a week before the Swan Hill-Melbourne ride, and finished at the same time. This stretched the manpower and resources of WICEN. A lot of people came forward willing to help, and without them the ride would not have been the success it was. Ian VK3FOX, complete with plaster cast, and John VK3XJB, were able to go with me to survey the route. This involved identifying possible checkpoints and preparing paperwork for the ride.

On previous Great Victorian Bike Rides, WICEN had two command caravans which would leapfrog each day, allowing one coordinator to rest. But, for the 1988 ride, one caravan was assigned to the Melbourne-Sydney ride, and the other was out of action. Fortunately, Preston City Council donated its community caravan. At the end of the day's ride, the caravan would go to the next finish point.

I could foresee problems along the route. The first was the river crossing near Torrumbarry, where riders would be ferried across the river by paddle steamers and punts. There were insufficient WICEN operators to be stationed on the NSW side to provide communications for about 40km of the ride, and vehicles could not cross on the water craft.

The problem was solved by two competent radio amateurs who were bicycle mobile on the ride - Bob VK3YSH and Greg VK3VT. They were able to provide communications along the route using hand-held facilities, and Bob just happened to have a Slim Jim antenna attached to his bike, which drew some strange looks throughout the ride.

Upon waking up in Echuca the morning of day three, all set for this difficult day, I was welcomed by the cheery faces of Peter VK3YF and Laurie VK3KL who said: "G'day, we're locals here to help. Where do you want us?"

I could have kissed them, but, as I hadn't shaved for a couple of days, I resisted (HI HI) and sent them off to the NSW side of the ride. Communications for the second and third days proved difficult, as the Swan Hill repeater had only a small coverage area. The planned use of the Bendigo group's portable repeater on Mt Kerang did not eventuate, due to problems with the repeater and poor conditions, despite the best efforts of Doug VK3DJY and group.

Two metres simplex and 3.600MHz were used to overcome these problems. Two metres 146.500 was boosted by the UHF/VHF translator installed in Echuca by Peter VK3ZPP.

Plans were made to use the Bendigo repeater for the Echuca-to-Castlemaine section of the ride, as this repeater had shown reasonable signal strength when the ride route was surveyed earlier. But this was not to be the case, because Murphy had to step in and, although the signal strength was good at night prior to the start of that leg, it had become useless during the day.

The Shepparton repeater was used to Colbinabbin, and the Mt Macedon repeater right through to Melbourne. Instances of deliberate QRM were experienced whilst using the Mt Macedon repeater. These instances did not result in significant delay to the summoning of either St John first aid or Ambulance Service-Melbourne.

However, the potential to seriously jeopardise emergency communications was there, and could have delayed ambulance arrival in the case of serious accidents. The deliberate QRM disgusted the WICEN operators and others listening on the repeater. It also reflects on our hobby, and can harm its image, if heard by ride organisers and emergency service personnel.

Day seven found us in Kyneton where we had suffered rain yet again, although this time it was coupled with fog and greasy roads. Fortunately, the rain cleared during the day and the riders were able to dry out, as did our radios.

During briefing at Kyneton, I had to advise David VK3DY some good news and bad news. The bad news was he was on duty that night, but the good news was, as our spies had discovered that it was his birthday, Greg VK3VT had cunningly obtained a birthday cake, and we all, including ride marshals, chorused David with "Happy Birthday".

The next difficult day I had coming was the last day from Bacchus Marsh to Melbourne's Batman Park. I did not have the route from the ride coordinator, Paul McKay, so was unsure where there were sufficient WICEN operators.

Finally, Paul McKay was cornered, and we plotted the route and set checkpoints. But there was an alternative route for the ride in case the West Gate Bridge had to be bypassed. The call went out, and more volunteers came in to help. However, the alternative bypass route was not needed, as bike riders had a tail wind for the bridge crossing.

The last rider reached Batman Park at 1332 on the Sag Wagon, and the WICEN net closed at 1333. We made it!

As WICEN coordinator for the ride, I can proudly say that all the radio amateurs who took part in the WICEN effort behaved as professionals, and were a credit to the Amateur Radio Service. I wish to thank the following personnel who either helped or took part in the ride.

Allan	VK3TCT
Allan	VK3KEP
Andrew	VK3JJJ
Andy	VK3CAP
Ben	VK3AKP
Bob	VK3KAH
Bob	VK3YSH
Colin	VK3AKQ
David	VK3YWZ
David	VK3DY
Denis	VK3BGS
Denis	VK3XP
Derek	VK3BYA
Doug	VK3DJY
Greg	VK3VT
Ian	VK3FOX
Janet	VK3BTU
Johanas	VK3PAR
John	VK3DKD
John	VK3XJB
John	VK3MAK
Keith	VK3CWT
Ken	VK3MCJ
Laurie	VK3KL
Len	VK3BGM
Len	VK3NJE
Lyle	VK3KLR
Margaret	VK3DML
Mark	VK3EME
Michael	VK3NJN
Neil	VK3XNW
Peter	VK3YF
Peter	VK3ZPP
Rob	VK3XL
Robyn	Brown
Rod	VK3JRF
Ron	VK3ECV
Ross	VK3JZ
Russ	VK3KRT
Sel	VK3CRZ
Stephen	VCY896
Steve	VK3DCA
Wilma	Maidment

All those who manned VK3SJB
Preston City Council

ar

Cobourg With An Extra Oscar

Jim Linton VK3PC

When the Canadians decided in 1819 to rename the town of Hamilton, a spelling mistake was made. You see, they called the town Cobourg, and added an extra letter 'o' in Coburg.

Charlie Ryan VK3BIT says all the Coburgs in the world, except the Canadian one, are spelled the same, and it happened due to a simple clerical error.

That quirk of history has been a source of amusement for Charlie Ryan VK3BIT. He lives in the Melbourne northern suburb of Coburg. His suburb changed its name from Pentridge to Coburg in 1870. The change was partly due to community feeling that the image of the town was being harmed by sharing its name with the Pentridge Prison which is in its municipality.

A quirk of history sparked an on-air friendship between Bill Turland VE3MDE and Charlie Ryan VK3BIT. They met earlier this year when Bill, from Cobourg – a Canadian town on Lake Ontario – visited Charlie in the north-suburban Melbourne city of Coburg.

Bill and Charlie first met on air last year when radio clubs and councils in Coburg, Cobourg and a third Coburg in Oregon, USA, did a three-way link-up to celebrate the Canadian town's 150th birthday. The pair have chatted up to three times a week for more than a year.

Charlie researched the source of the name Coburg - it was taken from the German royal house of Saxe Coburg. Canada's naming was in honour of the marriage of Princess Charlotte to Prince Leopold of Saxe Coburg, while Pentridge changed its name officially to recognise the visit of England's Prince Alfred, a descendant of the German royal house.

Bill VE3MDE decided to visit Coburg earlier this year and, after being a guest of honour at the Coburg City Council, he visited Charlie's shack for an eyeball QSO.

A fine example of the role our hobby has in fostering international friendships and understanding.

There is, however, another place that uses the name Cobourg. The Cobourg Peninsula in the Northern Territory, the most northern point of the Territory's mainland.

Charlie had a theory that it was named after Cobourg in Ontario. However, Cobourg Peninsula was discovered by marine surveyor, Phillip Parker King, in 1818, a year before Hamilton was renamed Cobourg.

A check with the Northern Territory Place Names Committee has solved the mystery. The peninsula was named after the Saxe of Coburg, like all other Coburgs. The spelling error in this case has been traced to King, and clearly shows up in his hand-written diary. ar

TELL
THE ADVERTISER
YOU SAW IT
IN
AMATEUR RADIO

ZL Licensing for VK Visitors

Ross Garlick ZL3AAA
Reciprocal Licence Bureau
NZART

Amateur Radio reciprocal licensing between our countries is covered by a Commonwealth recognition agreement.

The type or grade of reciprocal licence issued is dependant on the grade of the home licence.

Applicants with less than 12 word per minute morse qualifications will be granted a limited licence (VHF).

Qualifications of 12 wpm morse speed will be granted a general licence (VHF and HF, i.e. all bands coverage).

New Zealand offers two types of visitors licences:

A. A short term type. One month minimum but extendable to two or three months. The cost is set at $10 per month.

B. A Twelve month reciprocal licence is issued at a fee of $38.50.

Novice grade licence. An agreement between our countries allow the issue of a reciprocal visitors licence.

When applying for a New Zealand reciprocal licence it is necessary to produce the following:

1. Operators certificate (which must be valid for the term of the reciprocal licence applied for)
2. A certificate to indicate the morse speed at which the applicant is qualified.
3. A birth certificate or similar evidence of birth is required.
4. Applicants must submit a permanent postal address in New Zealand to which all correspondence can be sent.
5. Visiting operators will be allocated a call sign from the ZL0 series.

The New Zealand radio regulations governing the amateur bands operation must be adhered to.

Additional information on New Zealand conditions, band plan and regulations is available from:

Russ Garlick ZL3AAA, NZART Reciprocal Licensing Bureau, 23 Lydia Street, Greymouth 7801, New Zealand. Phone (027) 7332 Fax (027) 7133.

NZART Callbook is available from: NZART Headquarters, General Secretary, Box 40-525 Upper Hutt, New Zealand.

The cost of the callbook is $13 plus postage.

No prior application is necessary to obtain a visitors licence.

Personally apply at any NZ radio frequency service office and a licence will be issued 'over the counter'. ar

New Zealand Radio Frequency Service Offices

- All amateur radio licensing matters.
- Examinations for Amateur Radio Operator's Certificate

Office	Delivery Address	Postal Address	Telephone No.
Head Office	21-23 Cambridge Terrace, Courtenay Place, Wellington	PO Box 9343 Courtenay Place	(04) 850 009
Whangarei	National Mutual Building, Rathbone Street, WHANGAREI	PO Box 449	(089) 488 491
Auckland	Altos House, Cnr Newton Road and Abbey Street, Newton, AUCKLAND	PO Box 68-217 Newton	(09) 788 537
Hamilton	134 Victoria Street, HAMILTON	PO Box 982	(071) 387 150
Rotorua	Chief Post Office Building, Hinemoa Street, ROTORUA	PO Box 847	(073) 73 730
Gisborne (Senior RI)	New Zealand Post Building, Grey Street, GISORNE	PO Box 339	(079) 78 424
Napier	New Zealand Post Building, Dickens Street, NAPIER	PO Box 947	(070) 53 299
New Plymouth	New Zealand Post Building, Currie Street, NEW PLYMOUTH	PO Box 217	(067) 88 138
Wanganui	Gas Department Building, St. Hill Street, WANGANUI	PO Box 4102	(064) 57 538
Palmerston North	Telephone Exchange Building, 486-489 Main Street, PALMERSTON NORTH	PO Box 71	(063) 66 710
Masterton (Senior RI)	MS Lands Trust Building, 136 Queen Street, MASTERTON	PO Box 243	(059) 82 758
Wellington	Third Floor, 21-23 Cambridge Terrace, WELLINGTON	PO Box 9228	(04) 723 927
Nelson	34 Vanguard Street, NELSON	PO Box 997	(054) 60 832
Greymouth (Senior RI)	Telephone Exchange Building, Tainui Street, GREYMOUTH	PO Box 442	(027) 80 312
Christchurch	St. Elmo Court, 47 Hereford Street, CHRISTCHURCH	PO Box 1800	(03) 533 611
Timaru	28 Canon Street, TIMARU	PO Box 589	(056) 48 120
Dunedin	12 Hanover Street, DUNEDIN	PO Box 5647 Moray Place	(024) 771 125
Invercargill	Post Office Building, 13 Esk Street, INVERCARGILL	PO Box 247	(021) 44 952

QSLING SWL Reports

The transmissions of amateur radio stations on the HF bands are tuned in by Short Wave Listeners (SWLs) throughout the world.

The SWLs, particularly in the northern hemisphere, have their own QSL cards which they send through the bureau system to amateur stations they hear. However, SWL cards are being treated as junk mail by some VK radio amateurs, and tossed in the rubbish bin.

Some are puzzled and don't know what to do with a trickle or flood of listener cards received among the QSLs of amateur stations they have worked. While others routinely respond to each and every listener card by sending their VK card back to the SWL via the bureau.

The junk mail treatment is a little unfair to the genuine SWLer needing your card to confirm a country or for an award. It is also foolish to send off your QSL to anyone who claims to have heard you on air but who has not provided adequate proof. The SWL may not have heard your signal at all, but simply heard the station you were working. And it has been known for some unscrupulous SWLers to share listener logsheets among a number of friends. This practice results in a number of SWL cards from the same area with identical details. Your suspicions should be aroused!

The following guidelines are based on what several active DX stations do when they receive SWL cards:

1 Check that details correspond with your log.

2 If not found, either return the card via the bureau endorsed "not in log", or toss it in the bin.

3 Should the contact referred to on the card be found in your logbook, then weigh up the value of the report. Is it deficient in detail? Has the SWL proven s/he actually heard your transmission by making a reference to something specific? If deficient, endorse their card "Details insufficient - no proof you heard me", and be helpful by returning it via the bureau.

4 If asked to provide a QSL for a new locator square, country, state, or zone, or for an award, remember to include the salient details in your comments if they are not already printed on your QSL.

There are genuine SWLs in need of QSL cards.

If they don't supply accurate or sufficient reports, help educate them in the error of their ways.

Also remember that a fair percentage of Short Wave Listeners eventually become radio amateurs.

If they're treated fairly and encouraged, the good will can only increase the prospects of a continued influx of SWLs into the hobby of amateur radio. ar

1990 Australian Radio Amateur Call Book

WIA 80th Birthday Edition

Australian radio amateurs are advised that, subject to the following paragraphs, all Australian Amateur Radio licensees will have their callsign(s), names and notified address, included in the 1990 Call Book to be published in September 1989.

However, those amateurs who wish to have their name and/or address deleted from details to be printed, are advised that they may make such a request in writing to the Executive Office of the WIA, setting out what they wish to have suppressed. Any such requests must be received by the Executive office on or before Monday, 21 August 1989.

The WIA will take all reasonable care to meet licensees' wishes, but the WIA will not be responsible for any errors or omissions. In-so-far as WIA members are concerned, the WIA will publish the current information held in its own records. Non-members details will be published as received from the DoTC. ar

One Millionth Licence

There are now more than one million radiocommunications licences on issue in Australia.

The overall demand for radiocommunications services is growing at a rate of 15 per cent a year. The number had tripled in recent years.

The one millionth licence was personally issued recently by the Telecommunications and Aviation Support Minister, Ros Kelly, to a Limited Coast Station at Bundaberg in Queensland. ar

Murphy's Corner

Lloyd Butler VK5BR seems to have attracted an unfair degree of attention from the above named gentleman! Even our corrections to his article 'Measurement of Distortion' have themselves been corrupted! Page 48 of July AR should have shown:

$$Y = A.\overline{B}$$

instead of a Boolean function identical to X.

On pages 10 and 11 of the July issue, figures 3 and 4 were transposed. Fortunately, this error was obvious so it did not seriously detract from Hans Ruckert's excellent submission 'Radiation Immunity in Domestic Equipment'. ar

Review of the Yaesu FT 470 Dual Band Handheld FM Transceiver

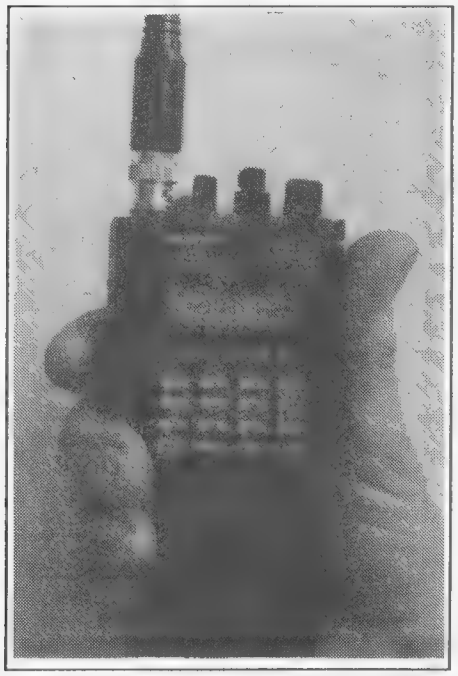
Bruce Bathols VK3UV
6 Ann Court
Aspendale 3195

Description

On first examination of the Yaesu FT470, you will be amazed at its compact size. Without the battery pack attached, it is slightly larger than a packet of cigarettes. However, this little device contains some amazing features.

Primarily it is a Dual Band, 2 metres and 70 centimetres handheld FM Amateur transceiver. It is difficult to comprehend that such miniaturisation actually exists. A comparison is being made of the features to a model five years older, being a single band (2 metres) and operated by thumb wheel switches, and nearly twice the size. In several dual band transceivers, the second band is an option; not so with the Yaesu FT470. BOTH 2 metres AND 70 centimetres are available ready for use.

The transceiver is controlled by a miniaturised computer system, complete with backlit Liquid Crystal Display (LCD) and numeric key pad. Operators purchasing this type of equipment are well advised to read the instructions first. Gone are the days where you just connect the antenna, switch on, and then start operating. This transceiver requires the operator to become fully conversant with ALL of the functions PRIOR to commencing operations. Failure to push the correct buttons and initialize the transceiver first, could create some remarkable headaches, even for the most experienced operator. However, all is not as dismal as the above statement appears. The instruction manual is very well written and documented, and very easy to follow. There are even "prompt" cards supplied for the forgetful.



Yaesu FT 470

The transceiver covers 4 MHz of two metres - 144.000MHz to 148.000 MHz, and 20 MHz of 70 centimetres - 430.000 MHz to 450.000 MHz. It has a total of 42 memory channels, 21 for each band, including three "special" memories. It also contains scanning and priority call channel facilities, and dual VFO control.

Initially, the operator enters the favourite frequencies and bands desired via the numeric key pad. These are stored permanently in the selected memory channel, and are able to be amended at any time. When power is disconnected, such as when removing or changing the battery pack, it is most pleasing to note that the contents of the memory channels are NOT lost.

Although not specifically mentioned in the instruction manual, it is obviously that either non-volatile Random Access Memory (RAM), or separate memory backup facilities are contained within the transceiver. This is a most welcome and advantageous feature, and alleviates the necessity to re-key the memory each time the power pack is removed.

Cross band operation is a major feature of the Yaesu FT470 transceiver. The LCD contains a host of information. The primary frequency to which the transceiver is tuned is shown in large figures, and the second band, or "sub-band" is displayed alongside in smaller figures. Pressing the "BAND" button on the key pad swaps bands. The "sub-band" now becomes the primary band and vice-versa.

The transceiver comes equipped with a special "dual band" helical antenna. This contains matching for both bands in the form of a duplexer type of matching arrangement. It is very neat and compact, and no larger than most stubby helicals to which we are currently accustomed. There is no need to change the antenna when using the alternate band during normal or portable operation. However, for Base Station use, it is preferable to change antennas, unless the Base Station installation also contains dual band features, and/or a duplexer. The same would be applicable for mobile opoeration. Naturally, separate high-gain antennas are more reliable for long distance work, but the supplied dual-band helix certainly provides satisfactory communications in "line-of-sight" conditions on both bands.

A "fader" type of control allows you to monitor both primary and sub-channels at the same time, with the audio level for each band being able to be adjusted to your own personal listening level. Quite a neat innovation!!

On-Air Tests

The first on-air transmission turned out to be a dismal failure. There was a healthy carrier being transmitted, but it lacked audio modulation and deviation. This disturbed the reviewer somewhat, as transmission is fairly straight forward. He became concerned that he had inadvertently caused some damage to the unit. It was later discovered that the test unit contained an internal fault.

The transceiver was returned to the distributors, and it was discovered that a metal clip had been installed incorrectly, and was shorting out the audio circuitry. This was subsequently repaired and the test/review procedures were re-commenced. The frequency response of the received audio is of a very high quality. The internal speaker is well balanced, albeit quite small, and the audio output level was quite satisfactory to fill a normal room. It was not tested for noise comparison in a mobile situation, but from previous experiences in similar circumstances, the reviewer has no doubts that the received audio output in that situation would be able to cope quite admirably.

Transmission reports on both 2 metres

and 70 centimetres proved most satisfactory. A good level of deviation and microphone sensitivity was evident, and no distortion was apparent. The review transceiver was supplied with a 7.2 volt, 600 mAh nickel-cadium battery pack (Model FNB 10), and charger. This produced 2 watts of RF output on both bands.

Purchasers will be supplied with a heavier duty battery pack, (Model FNB 14) rated at 7.2 volts and 1000 mAh, and carrying case.

Conclusion

In general, the Yaesu FT470 is a most compact and sophisticated dual band amateur FM hand-held transceiver. For someone who has large fingers, its physical size does create a small level of difficulty in operating the controls and keypad, but in spite of this, the controls are well situated.

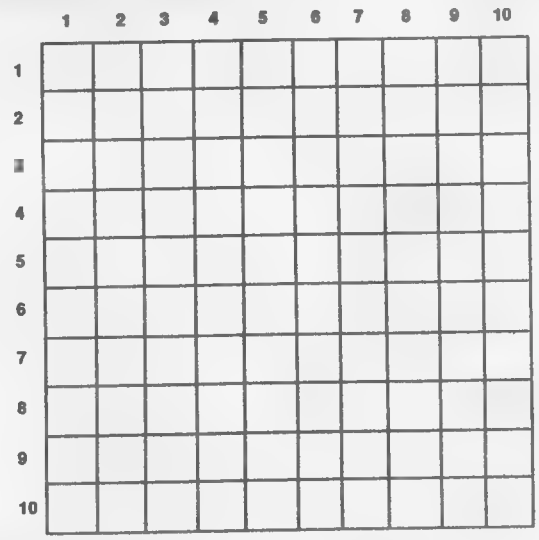
One may have a little difficulty in reading some of the information shown on the LCD, such as repeater offset indications, as the display itself is only one centimetre in height. Nevertheless, the LCD is quite readable in normal light conditions, and there is a facility to "back light" the display if need be. There are several options available, such as higher voltage (12 volts, 5 watts) battery packs and chargers, external speaker/microphone, earpiece/microphone, and mobile mounting hardware (the options were not supplied for the review).

For the amateur who is looking for a compact dual band 2 metre and 70 centimetre hand-held transceiver, with almost every conceivable operating facility available, the Yaesu FT470 is going to be hard to beat.

The review set was kindly supplied by Dick Smith Electronics, and supplies should be available shortly through their normal outlets as advertised in "Amateur Radio" magazine. ar

Morseword No. 29

SOLUTION PAGE 56



Clues

Across

1 Cut
2 Globule
3 Experienced
4 Rage
5 Scottish garment
6 Queensland town
7 Item of property
8 Santa's exclamation
9 Passive protest (3-2)
10 Hurries

Down

1 Attack
2 Podium
3 Nobleman
4 Chooks
5 Rips
6 Set of rooms
7 The _____ have it
8 Skin
9 Fat cat
10 Cornet

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QSLS FROM THE WIA COLLECTION

Cards From Hawaii

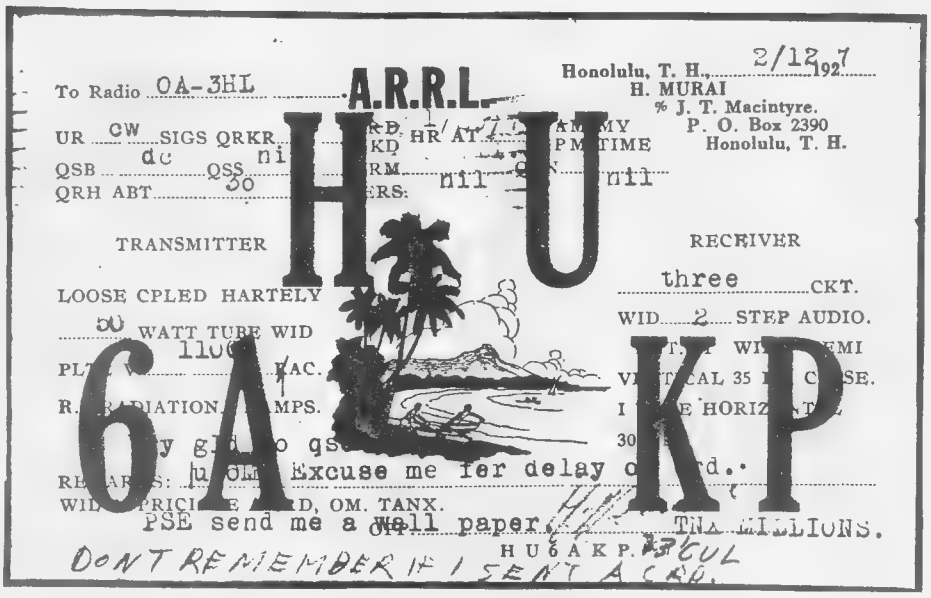
Ken Matchett VK3TL
Honorary Curator
PO Box 1
Seville 3139

The three QSLs shown here are all from the Hawaiian Islands. These islands, discovered by Captain Cook and originally named by him the Sandwich Islands (after the Earl of Sandwich), have been given quite a range of call-sign prefixes over the years. These prefixes are interesting in that they show the developmental change in the system by which such prefixes have been allocated.

HU6AKP

It was in the early and mid-1920s that wireless experimenters used a system of prefixes that were, in the main, based upon the initial letters of the country represented. Thus, Brazil used the letters BZ, Palestine PE, Phillipines PI, Chile CH and so on. In the case of countries that seemed to be the most active on the bands, only one letter was used to indicate that country. Examples include: A = Australia, C = Canada, F = France, G = Great Britain, Z = New Zealand, U = USA. Official lists of call sign allocations for land and ship stations can be found as early as 1913 (for example in the Year Book of Wireless Telegraphy of that year), but after World War I they were not used by the experimenters of the day.

The HU6AKP QSL is dated 1927, the QTH being given as Honolulu TH, the "TH" referring to "Territory of Hawaii" (Hawaii did not become the 50th State of the USA until 1959.)

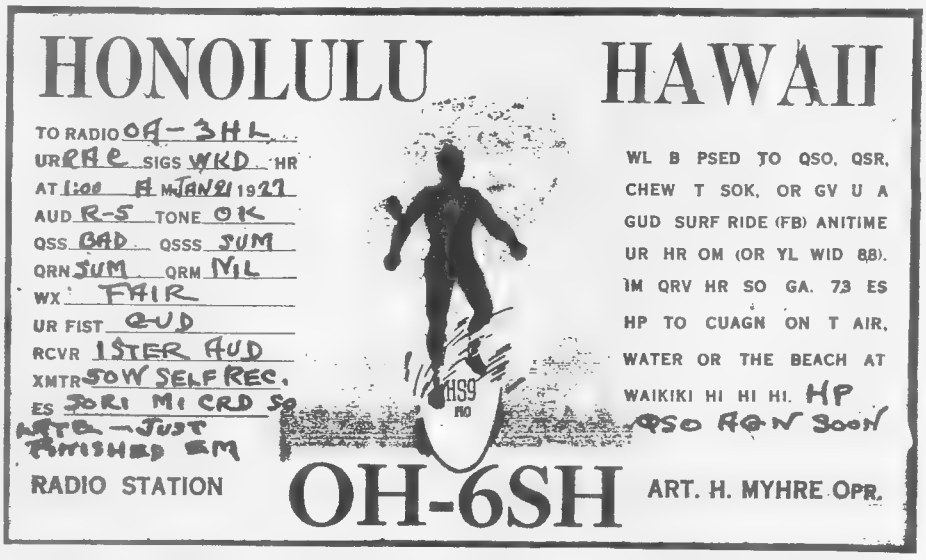


OH6SH

In early 1927, a new system of allocating call signs to experimental stations was introduced. This was the system of "intermediate" (see "Amateur Radio August 1988, p 38), which gradually led to what we know now as "prefixes". The "intermediates", joining two call signs, was a four letter combination, two being derived from the sending station, two from the receiving station. For example, O stood for stations in Oceania, E = European stations, A= Asian stations and so on. This letter was followed by a second letter that served to identify the country, e.g. OA = Australia, OZ = New Zealand, EG = England, AC= China, NU = USA. Thus, the Hawaiian Islands used the prefix OH. The vast majority of stations began using the new system from 1 February 1927, but a few like HU6AKP persisted using the old system. (His call should have been OH6AKP since the QSO occurred after that date).

The Q-code QSS given on the card is rather interesting. This signal, which today is related to calling on a particular frequency, was years ago used by experimenters to mean "Are my signals fading?" The Q-signal next to it, viz QSSS meant "Are my signals swinging?" Both signals are no longer used.

The QTH was the capital, Honolulu, lying not on the island of Hawaii, but on Oahu. It is here we find the famous Waikiki Beach, the biggest tourist attraction of all the islands of the Hawaiian group, a fact not lost by the operator of this station.



K6AJA

This QSL is, by comparison with the HU6AKP and OH6SH QSLs, a fairly modern one. It is dated April 1935. The W prefix was, at an early date, the only one issued to amateurs on the US mainland, the prefix K being allocated to US possessions. The prefix K6 was, before the war, shared with Guam, Midway Is, American Samoa, Wake Island and the American Phoenix Group (Canton and Jarvis Islands being represented by amateurs).

Acceding to a request in late 1938 by the ARRL, the licensing authority, the Federal Communications Committee (FCC) allocated the K6 prefix to the Hawaiian Islands, the other US possessions being given different identify-

ing prefixes. (History shows that the first list published by the FCC was substantially modified as far as prefixes were concerned, but K6 for Hawaii remained unchanged). It is interesting to note that it was first proposed to allocate the prefix KH6 to American Samoa. In fact, the station KH6SHS did operate cw on 20 metres out of Pago Pago in 1940 (America was not then at war). We know now that KH6 was to become, after World War 2, the official prefix for Hawaii.

If you would like to play a part in building up the WIA QSL collection and to save something for the future, would you please send a half-dozen (more if you can spare them) QSLs which you feel would really help the collection along.

All cards are appreciated, but we especially need commemorative QSL's, special event stations QSL's, specially assigned call QSL's (eg VK4RAN), pre-war QSL's, unusual prefixes, rare dx and pictorial QSL's of not so common countries. Could you help? Send to PO Box 1, Seville 3139, or phone (059) 643 721 for card pick-up or consignment arrangements for larger quantities of cards. Thanks.

The Wireless Institute would like to thank the following for their contribution of QSL cards towards its collection (Supplementary List) :-

Laurie	VK2AMB	Chas	VK4UC
Brian	VK4LV	Bruce	VK3SO
Kevin	VK3BKW	Rob	VK5RG
Robin	VK6LK	Ron	VK3APM
Keith	VK3AKB	Norman	VK4BHJ
Kevin	VK3CV	Barry	VK5BS
Elgar	VK5ED	Keith	VK4KS
Peter	VK3CAU	Eddie	VK3XX
Aubrey	VK2AXT		

Also the friends and families of the following "silent keys" (Supplementary List) :-

Jim Keenes	VK3KE
Ron Ride	VK3NH

If it is your sad duty to assist in the disposal of equipment for a family of a "silent key", would you kindly approach the family to see if they would like to donate QSL's to the WIA collection? Most are assigned to the tip, but maybe we can save a few for the future.

DX QSL Contributors' Ladder

Here is a further list of contributors or special call QSLs (Supplementary List) :-

Robin VK6LK (22 points)
Prefixes: CR3, EJ7, EL1, HW9, LZ7, PW2, YI1, SW1
Special Calls: GB0CSR, GB0SGD GB8RB, 4O1WCY, 8A0IT, 8J2HAM

Barry VK5BS (20 points)
Prefixes: TJ2, TF7, T31, S0, HH5, 6O0, 9I1, IT0, TU4, HS6

Keith VK4KS (11 points)
Prefixes: TU20, OY8, 5A0, ZY3, XO7
Special Call: GB2RS

Brian VK4LV (9 points)
Prefixes: BV7, OG6, ZZ5
Special Calls: 9D5A, PJ0DX, AP2ARS

The first six places on the ladder are held by

VK3AHQ	91 points
VK4UC	56 points
VK8XX	52 points
VK5AGX	29 points
VK6LK	22 points
VK5BS	20 points

Our sincere thanks to these fb DX-ers and their generous contributions. Can a few more DX-ers help us?

Use Your QSL Collection

Through the generosity of many amateurs and the friends and families of "silent keys" all over Australia, the WIA has built up a fine collection of both modern and pre-war QSL's. Several of these are mounted on display boards. These can be borrowed by WIA members both in Victoria and interstate. Arrangements need to be made by contacting the Honorary Curator, Ken Matchett VK3TL on (059) 643 721 or by writing to PO Box 1, Seville 3139.

Readers who propose writing on any historical aspect of amateur radio should also make enquiries of the curator to see if any QSL's of the collection could be used in the article they are planning. Photostat copies of QSLs suitable for reproduction are available free of charge upon request. Display boards are also available upon loan for radio conventions and club meetings.

SPOTLIGHT ON SWLING

Matilda's Short Waltz

Robin L Harwood
52 Connaught Crescent
West Launceston 7250

Recently, Radio Australia introduced a Bulletin Board (BBS) called "Matilda". Computer buffs were able to access it from throughout the World. Created to celebrate Radio Australia's 50th Anniversary by Robin Howells, who was the Sysop (system operator), "Matilda" generated considerable interest, with many shareware programmes, together with updates on RA programming. Also, Jerome Van Der Linden of the Southern Cross DX Club, and Peter Bunn or "OZ DX" provided files of updated DX information.

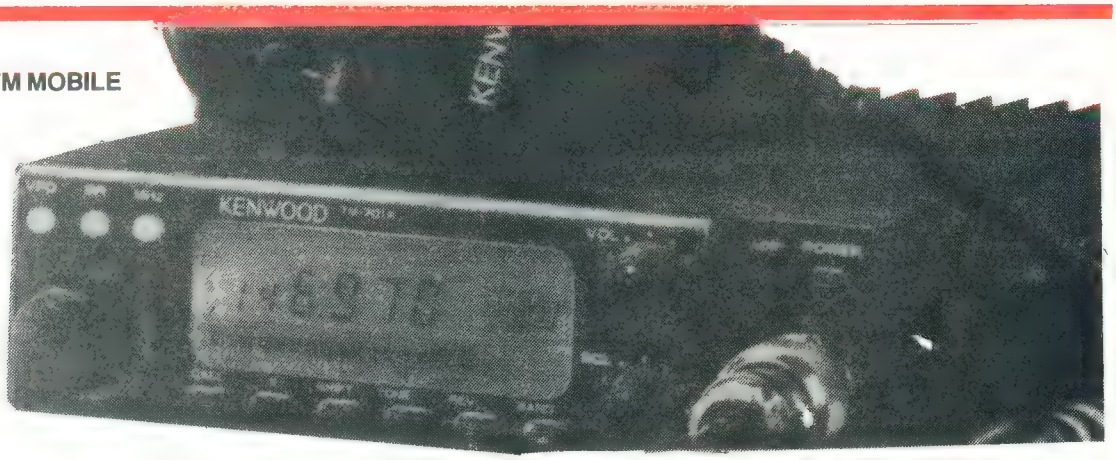
"Matilda" averaged 22 calls each day, the majority coming from within Australia. This has certainly proved that there is a need for a BBS. As you may know, there are several BBS within the States, devoted to SWL/DX activities. Yet, sadly, "Matilda" is no longer on stream. Due to internal funding cutbacks, RA could not fund it beyond 30 June. Also, the time expended in maintaining the files by the Sysop was proving too costly. During 61 days it operated, over 1400 check-ins were logged-on. As I personally am not into computers, I was unable to take advantage of what "Matilda" offered, but I am aware of many who did. VK4CRO in Belmont (Qld) wrote to tell me that his nephew in Singapore was able to access it without any hassles.

Another event in late June/early July was a test transmission from VNG, Australia's time and standard frequency station. It now is located at the CAA HF transmitting site at Llandino (NSW). For the past couple of months, VNG has been continuously operating on 5 MHz. Recently, the VNG Users' Consortium got permission to conduct experimental transmission on 10 and 15 MHz during local daylight hours. Signals here in Launceston were excellent. Five MHz is only good here in the evening hours. Their address is PO Box 1090, Canberra, ACT 2601.

Station KY0I in Saipan has gone off the air until late October, to install new antennas so that it can broadcast to SE Asia and Australia.

KENWOOD

TM-701A FM MOBILE



MIGHTY MIDGETS

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The station, which is owned and operated by the Christian Science Publishing Company, is also dropping its music format to concentrate on the same programming as WSHE/WCSN. The organisation seems to have also cutback on its programming.

Incidentally, if you wish to update the current propagation forecasts, you may be interested in knowing that WWVH in Maui, Hawaii, has the same forecast as WWV, but at different times. WWV gives it at 18 minutes past the hour, while WWVH has theirs at 45 minutes past the hour. Also, the RA propagation forecast at 0225, 0827, 1227 and 1625 is now heard daily.

Radio Canada International is the latest station to commence using the 13 MHz broadcasting allocation. Primarily aiming at Central and South America, it can be heard on 13720 kHz between 0100 and 0300 UTC. It also transmits to Africa on 13680 kHz between 1800 and 2000 UTC. Radio Veritas in Manila is now on 15500 kHz in English between 0130 and 0200 UTC. This station is owned by the Catholic Church.

Well, that is all for this month. Until next time, all the best of DX! ar

Ten Metre Repeater

The Melbourne Ten Metre FM Users' Group has advised AR magazine of a 29MHz repeater in Hungary.

Using the callsign HA3BME it receives on 29.585MHz and transmits 29.685 MHz.

Its output power is 70 watts into vertically polarised antennas, and has been worked by VKs when the band is open.

The Melbourne group says this repeater is cross-linked to a Hungarian 2 metre repeater allowing users to *talk to the world* using something as simple as a hand held transceiver.

Special Singapore Call Sign

1989 is the 20th Anniversary year of the foundation of SARTS - the Singapore Amateur Radio Transmitting Society. The foundation date was 28 August 1969.

1989 is also the year for the 17th annual SEAnet Convention, and it will be held in Singapore from 17 to 19 November 1989.

To celebrate these two events, Singapore Telecoms has given permission for the optional use of the 9V0 prefix (for the period of 1 July through 30 November) in lieu of the usual 9V1 call.

During the SEAnet meeting, an official station 9V0SEA will operate on the HF bands whilst special 50 MHz tests will be again carried out using the call 9V0ES.

VHF/UHF

An Expanding World

Eric Jamieson VK5LP
9 West Terrace
Meningie 5264

All times are Universal Time Co-ordinated indicated as UTC

Beacons

Advice has been received that the Perth beacons are off the air, pending a shift to a new location.

According to Japanese operators, during March and April many stations ran their rigs as beacons, mostly between 50.090 and 50.120. Stations listed were XX9KA, ZK1MQ, AL7FH, CX8BE, HC5K, K6MYC, LU1DMA, CE3BFZ, PY2DM, FO5DR, 9H1BT, A35IC, VK9NS and 5W1HS. No doubt there were many more.

Six Metres

As expected, the six metre band has been relatively quiet. There have been a number of Es winter-time openings to VK2 and VK4, with one of the better periods being on 25/6, when VK8GF and VK8ZLX were working VK3, VK5 and VK7 stations. The good conditions continued on 26/6 when at 0556, VK8GF was 5x9 on 50.110 at Meningie. I was alerted to the possibility of something happening by hearing and working Hugh VK5BC at 0544 at Berri. Although Hugh is always audible here, no matter in which direction he points his beam, when his signal became 5x9 with the antenna on Adelaide, an opening to somewhere via Es was possible. The opposite has been observed with F2; during the equinox, when Hugh's signal starts to weaken, I look to the north east for F2 signals.

Col VK5RO reported that during June he had worked all VK states and some ZL's on Es. On 2/7 at 0130, he was pleased to work N6USV/DU3 (formerly KB6FIQ/DU3) at S3. This brought his six metres tally of countries to over 40. Mick VK5ZDR also worked the DU3.

An item I missed earlier on 5/5 Col VK5RO worked W4EJW, located north of Palm Springs on the eastern portion of the Florida Peninsula. This would appear to be the most easterly US station worked from VK5 during Cycle 22.

The best contact for June would surely be to BY5RA in China. He was worked by Steve VK3OT and Arie VK3AMZ at 0105 on 3/6 with signals 559. Steve worked JA1VOK with an HL1 station on CW beneath him. After completing the contact, Steve called the HL1 and received no reply. On calling again, Steve was answered by BY5RA and from this the contact resulted. In the light of recent events in China, this must be seen as a very rare contact, so Steve's constant vigilance has paid off. I understand that BY4RB was worked in March/April first by Tom VK4DDG and then by Steve VK3OT.

Another rare one was the Japanese DXpedition to Malaysia with the callsign 9M2FMX. The group worked 930 stations, but only two in VK, namely Don VK6HK at 0105 and Steve VK3OT at 0145 on 10/6. This station was also heard by Graham VK6RO on 11/6 on 50.075. The same morning at 2330 VK3OT worked a new station in Fiji - 3D2EA who recently moved there from New Guinea.

Since moving from Byron Bay (VK2DDG) to Queensland, Tom VK4DDG has been making the most of the DX. There is not much left for him to work in the Pacific area, and more exotic contacts have included PJ9EE, 9Y4VU, TG9AWS, V31PC and, of course, BY4RB. Four stations appear to be vying for the position of most countries worked on six metres; VK4DGG, VK4ZJB, VK2BA and VK2QF. All appear to have tally of more than 50 countries. Reports indicate that JA4MBM and PY5ZBU may have top places in the world scene over 100 countries. It will be interesting to see who becomes the first amateur in the world to confirm having worked 100 countries on six metres. Many stations are in the 70 to 80 countries bracket.

Looking over the sheet of Neville VK2QF and its 52 countries, a question has been answered for VK5LP. On 18/4, at about 0123, I was trying to decipher an S3 station under the S9 plus signal of XF4L, and got P6JW. But the DXCC list does not contain a P6, so the signal remained a mystery. AT 0031 on 18/4 VK2QF worked 8P6JW in Barbados at 5x9, so that appears to have been the station I heard.

The May issue of the Japanese "ham radio" magazine, courtesy VK6RO, lists a few good contacts during March. They include, CX8BE, HC5K, F5QT, LU9EMT, CE3BFZ, G3XBY, XX9KA, PY2DM, BY4RB, 9H1BT, VK9YQS/VK0, SZ2DH, ZD8MB, 8Q7TT, 5H1HK, ZK1XH, plus a string of Pacific area countries.

Brunei

Andrew Davis, V85DA reports from Brunei that after leave in Canberra, there is much correspondence needing replies. He says that on 4/6 he heard 9M2FMX calling CQ on 50.075 and working split frequency to 50.475, but missed a contact, as his TS600 cannot work split frequency.

On 11/6 Andrew worked 39 JA's between 0249 and 0330. At 0330 the VS6SIX beacon was steady but weak. At 1322 he worked YC0UVO with KB6FIQ/DU3 and VS6UP on the same frequency, but heard little of the others. To assist his signals, Andrew now has a HL66V amplifier, to lift his 10 watts to 60 watts.

Andrew usually checks each day 50.0 to 50.5 and 52.0 to 52.5 for activity or beacons, during his lunch break at 0430, and monitors 50.110 from 0900 to 1500. He is also after his HF DXCC, so spends some time on the HF bands. The only other station on Brunei with six metre capability is Malcolm V85AH, who has a TS680

FT-747GX BUDGET H.F. Transceiver

2 YEAR WARRANTY!

The FT-747GX is a compact SSB/CW/AM and (optional) FM transceiver providing 100 watts of PEP output on all 1.8-30MHz amateur bands, and general coverage reception from 100kHz to 30MHz. Convenience features include a front panel mounted speaker and unobstructed digital display, operator selectable tuning steps for each mode, dual VFO's for split frequency operation, and 20 memory channels (eighteen of which can store split Tx/Rx frequencies). Wideband 6kHz AM, and narrow 500Hz CW IF filters are also fitted as a standard feature. Includes bonus D-2105 or D-2110 hand microphone. See ARA Review - Vol II, Issue II.

D-2930

$1299 or **$1329** with heavy duty antenna base and choice of 1 H.F. mobile whip (80, 40, or 20m only)

DICK SMITH COMMUNICATIONS

FT-4700RH Dualband Transceiver

Continuing the tradition started by Yaesu with the FT-2700RH, the new FT-4700RH dualband 2M/70cm FM transceiver now provides higher levels of performance, while offering even better value for money!

Features include 50 watts output on 2 metres (144-148MHz), and 40 watts output on 70cm (430-450MHz), with an inbuilt cooling fan for long term reliability. True full-duplex crossband operation is supplemented by dual band simultaneous reception or auto-muting reception (with independant squelch and mixing balance), so you can listen for calls on both bands simultaneously, or work someone on one band while also listening on the other band. The optional YSK-4700 controller cable allows the main body of the transciever to be installed under a seat, while the front panel/controller mounts conveniently on the dashboard. On the control panel, the bright amber back-lit LCD shows both VHF and UHF frequencies and signal strengths, and all controls have back-lit labels for clear readability, with a dimmer switch for nightime viewing. A total of 20 memories and 5 selectable tuning steps make frequency selection easy, while the advanced scanning features allow quick detection of signals on either, or both bands. And all this is backed up by our exclusive 2 year warranty, the longest in the industry.

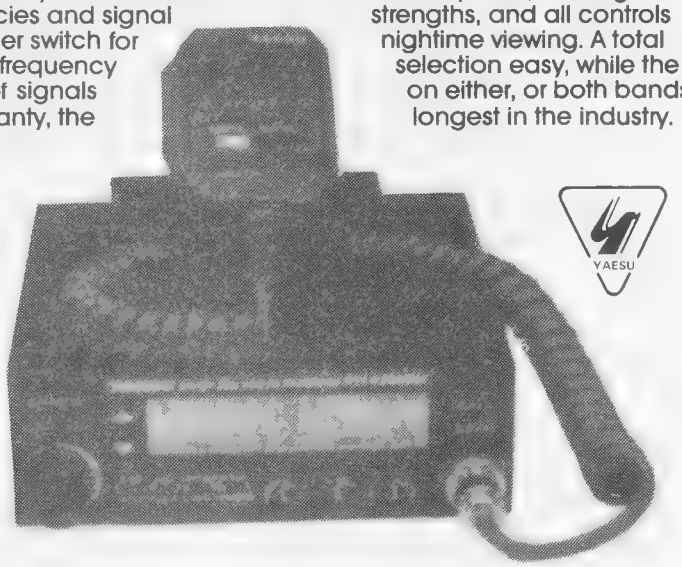
D-3300

Optional YSK-4700 (D3301) $49.95

$1295 Save $100

With Bonus

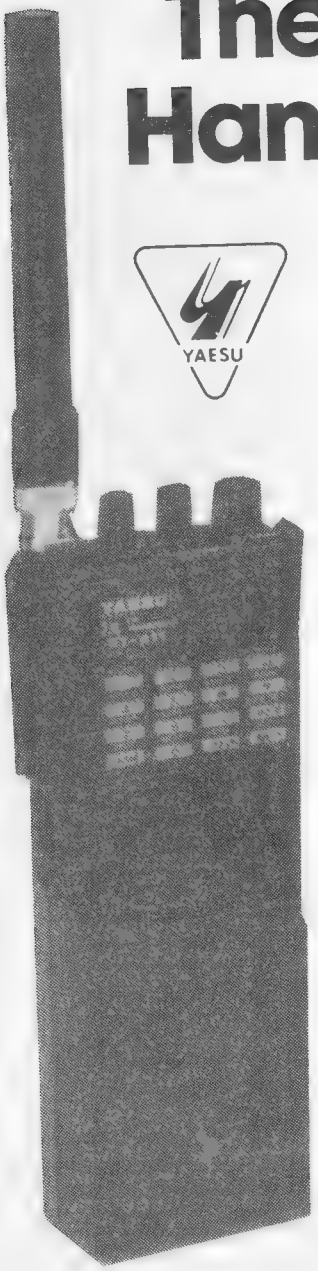
D-4207 2m 5/8λ antenna
D-4030 70cm Co-linear antenna



DICK SMITH COMMUNICATIONS

YAESU

The Ultimate 2 Metre Hand-held Transceiver



The FT-411 is a top-of-the-line ultra compact 2 metre handheld offering an incredible array of features without the size and weight of previous sets. Expanding on the microprocessor controlled features of previous models, the front panel multi-function back-lit keypad allows easy frequency entry, selection of the 49 tunable memories (which store repeater shifts, or separate Tx/Rx frequencies), setting of the programmable-interval 'power-saver' system, as well as a host of other convenience features. CPU control also offers 2 VFO's, rotary dial tuning with 5 selectable tuning steps, a multi-function back-lit 6 digit LCD screen with bargraph Signal/P.O. meter, and a range of scanning options. Even VOX (voice-activated transmit) circuitry is provided, allowing hands-free operation with the optional YH-2 headset.

Yaesu have also recognised that a hand-held radio must be ruggedly constructed, and yet be small enough and light enough to carry around all day. Through the extensive use of surface-mounted components, a heavy duty die-cast rear panel, rubber gasket seals around all external controls and connectors, and a carry case supplied as standard, the FT-411 will provide reliable operation even in dusty or humid environments while measuring only 55 (W) x 155 (H) x 32mm (D), and weighting less than 550 grams (including a high capacity 1000mAH FNB-14 NiCd battery giving 2.5W output). A range of inexpensive optional accessories are also available to provide flexibility for users differing requirements. See ARA review Vol 12 Issue 3.

Complete Package: FT-411, FNB-14 7.2V NiCd, Carry Case, Antenna, Approved AC Charger.

D-3350 **$499**

EXCLUSIVE 2 YEAR WARRANTY

Optional Accessories

PA-6	DC Adaptor/Charger suit FNB9/10/14	D-3498	$39.95
FNB-11	600mAH NiCd Battery (5W output)	D-3496	$99.00
MH-12A2B	Speaker/Microphone	D-2115	$49.95
YH-2	Mic/Earphone Headset	D-2200	$49.95

DICK SMITH ELECTRONICS

• **NSW** • **Albury** 21 8399 • **Bankstown Square** 707 4888 • **Blacktown** 671 7722 • **Campbelltown** (046)27 2199 • **Chatswood Chase** 411 1955 • **Chullora** 642 8922 • **Gore Hill** 439 5311 • **Gosford** 25 0235 • **Hornsby** 477 6633 • **Hurstville** 580 8622 • **Liverpool** 600 9888 • **Maitland** 33 7866 • **Miranda** 525 2722 • **Newcastle** 61 1896 • **North Ryde** 88 3855 • **Parramatta** 689 2188 • **Penrith** (047)32 3400 • **Railway Square** 211 3777 • **Sydney City** 267 9111 • **Tamworth** 66 1711 • **Warringah Mall** 905 0441 • **Wollongong** 28 3800 • **ACT** • **Fyshwick** 80 4944 • **VIC** • **Ballarat** 31 5433 • **Bendigo** 43 0388 • **Box Hill** 890 0699 • **Coburg** (03) 383 4455 • **Dandenong** 794 9377 • **East Brighton** 592 2366 • **Essendon** 379 7444 • **Footscray** 689 2055 • **Frankston** 783 9144 • **Geelong** 43 8804 • **Melbourne City** 326 6088 • **Richmond** 428 1614 • **Ringwood** 879 5338 • **Springvale** 547 0522 • **QLD** • **Brisbane City** 229 9377 • **Buranda** 391 6233 • **Cairns** 311 515 • **Chermside** 359 6255 • **Redbank** 288 5599 • **Rockhampton** 27 9644 • **Southport** 32 9863 • **Toowoomba** 38 8300 • **Townsville** 72 5722 • **Underwood** 341 0844 • **SA** • **Adelaide City** 232 1200 • **Beverley** 347 1900 • **St. Marys** 277 8977 • **Elizabeth** 255 6099 • **Enfield** 260 6088 • **WA** • **Cannington** 451 8666 • **Fremantle** 335 9733 • **North Perth** 328 6944 • **Perth City** 481 3261 • **Midland** 250 1460 • **TAS** • **Hobart** 31 0800 • **NT** • **Stuart Park** 81 1977

and a five element beam at 35 feet. He has worked JA, YB0 and some VK's. His QSL address is Box 471, Tutong 5004, Brunei.

A recent contact with Gordon KB6FIQ/DU3 (now N6USV/DU3) indicated that Gordon is very active on six metres, using a 150 watts Mirage amplifier to a six element beam. He has worked more than 1000 JA's, and he looks for contacts with VK each night. He missed the contacts to South America, but was very impressed with the big signal from KH6IJ and his four by eight element array.

Andrew said that he had his contact with FK8EB confirmed. Henri was running 10 watts to a whip on the roof of his car.

South East Radio Group

This Group of Amateurs at Mount Gambier held their 25th Anniversary Convention over the June holiday weekend. There was a very good attendance of amateurs and visitors, who could spend much time viewing and purchasing from a vast amount of equipment and trade displays staged by interested organisations.

The various events organised by the Group created much rivalry between the VK5s and the large contingent of amateurs from the North East Radio Group of Victoria. The latter were the outright winners of the coveted SERG Trophy, once again. It was not hard to see why - they played the game tough using sophisticated direction finding equipment, and obviously many days of hard work had been expended in the preparation of a variety of vehicles for the mobile tasks presented to them.

At last year's Convention, VK5LP issued a challenge for home constructors to build a two valve and rectifier regenerative AM band receiver, and provided a circuit and certain parameters to be met during construction. The response was better than expected, with 12 entries being tabled, with nine in working order. All the radios were well constructed, and those working, performed exceptionally well. The winner was Ivan VK5QV of Mount Gambier, for a very professional job built in the style of the late 1920s, and with authentic (in appearance) parts!

During the trophy presentation, Eric VK5LP congratulated Trevor VK5NC, for another outright win in the Ross Hull Contest. The trophy for which was on display, after having been rejuvenated, following a period of neglect. A joint appeal was made for more amateurs to support the Ross Hull Contest, and to send in their logs.

The SERG amateurs are to be congratulated on a well organised function, under the leadership of the Convention Organiser, David Edwards VK5FF and the President, Trevor Niven VK5NC. The proceedings concluded with the famous SERG Sunday evening gourmet meal, provided by the local ladies.

Peter VK8ZLX from Alice Springs was at the Convention, and his eyes were fairly bulging at the sign of so much equipment available for purchase. He paid a state visit to the VK5LP mansion on his way home.

Mount Gambier

I had wondered how much six metre DX had been worked from Mount Gambier - they being at a lower latitude. The May/June issue of the SERG magazine indicated that VK5NC and VK5DK were heavily involved and between them, during March/April, they worked many JA's from all districts: KG4SM, XE1MD, XE1GE, 3D2ER, P43AS, KP4A, W5UWB, VP5D, WA6BYA, T30DJ, K65DX, T20JT, XF4L, H44GP, ZL7TPY, ZL7TZ, KP4EIH, T20AA and ZLs. They certainly shared very well in the openings.

Use of Six Metres in Australia

It gives me much pleasure to report a successful conclusion to the WIA submission to DoTC, for the use of the six metre band in Australia. The operating conditions follow closely those requested by the WIA, and are the subject of a special report elsewhere in this issue of Amateur Radio; hence, I need not elaborate here. Except for those in prime Channel 0 viewing areas we will have the opportunity to initiate legal contacts with overseas stations on the 50 MHz section of the band.

In the past there have been criticisms levelled at the WIA and its seeming procrastination. However, from time to time, the WIA achieves end results which could never have been achieved by fragmented approaches from individuals. Perhaps the critics can send a bouquet on this occasion.

Also, DoTC is to be complimented on its commonsense approach to the matter of 50 MHz working by amateurs, who have demonstrated that operating without interference on that portion of the spectrum is possible. That situation should continue, if amateurs will continue to operate with care. Amateurs should be grateful that DoTC has expedited the matter, to the extent that the privileges will now be available for the next equinox, when prime F2 conditions will reappear.

The lesson to be learned from the whole of this exercise is that we became complacent following the good results obtained on 52 MHz during Cycle 21, when, due to much publicity, the world was aware that we could use 50 MHz. Certainly, we lost many good contacts through the lack of 50 MHz, and the inability of some stations to operate on 52 MHz, but in the main we did quite well.

However, we failed to keep the ball rolling in an effort to reduce 50 MHz operating restrictions prior to Cycle 22. But that is behind us now, so let us move forward, do the right thing by our neighbour, and thus, demonstrate our need for the use of the 50 MHz portion of the six metre band, without detriment to anyone else.

EME and All That

David, VK3AUU, has written to fill in the gaps since his last letter.

David reports that after many tests, on 21/1/89 he finally made contact with VK2DVZ in Taree on two metres. During these tests, he discovered he could fairly consistently hear the sound from Newcastle Channel 5A (143.775 MHz), a distance of 900 km.

The weekend contacts on 144.2 and 432.2 MHz between Sydney, Canberra and Melbourne continue with VK2ZAB, VK2DVZ, VK2ZRE, VK1VP, VK1BG, VK3UM, VK3AUG, VK3ZJC, VK3XRS and VK3AUU being the main participants. Gordon VK2ZAB has regular contacts with a group of Gold Coast stations, and VK4BRP is able to work Gordon on a fairly regular basis using 432 MHz.

VK3AUU has regular skeds with VK7MC, VK7ZIF, VK7RR and VK7ZIK. Autumn openings to Adelaide have been to VK5ZDR, VK5RO and VK5NY, occasionally to VK5AKM and VK5ZMK.

The auroral activity of 13 to 19 March brought contacts with many stations in VK2, 3, 5 and 7 on 52, 144 and 432 MHz.

Dave W5UN, who now operates with a 48 bay array with 30.5 dBd gain on 144.008, decided to attempt EME contacts with VK5NY and VK6HK. David VK3AUU telephone across the nation to try and find starters in each state.

On 29 April Dave W5UN started with a successful contact to ZL4DO and a failed contact with FK1TS before the moon rose in VK. AT 1410, Ross VK2DVZ, who had just completed his first EME contact with W4ZD, was poised to try for W5UN and this proved successful at 1426. Ross uses four 9 element yagis.

Next was Eddie VK1VP with a single yagi. At 1446 a successful contact was completed. W5UN struggled with Roger VK5NY for 26 minutes until he was able to send RO, but Roger was unable to complete the contact. (About two weeks later he did finally complete a two-way with W5UN.)

Peter VK8ZLX was next. The CW speed was slowed to accommodate Peter, and after some time an O report was sent, later lifted to RO and 73s. Mike VK3APW had a good contact with W5UN, finally exchanging 5x5 reports. David VK3AUU also reported strong signals from W5UN. At 1644 signals were sent between VK6HK and W5UN and at 1716 R reports were being sent.

On 30/4 W5UN was heard signing with Rod VK4BRP, but a valid contact was not made. However, Bill VK4LC, with four yagis, completed a contact. W5UN did not hear Mike VK7MC as he had an aiming problem and was about 20 degrees off the moon. Later W5UN tried again with VK5NY, but Roger was not completely happy with the contact. Finally, W5UN had a weak contact with Bill VK6ZFY.

Since those two good nights of EME operating, David W5UN has had contacts with VK5ZDR, VK5ZK, FK1TS, the latter after 16 attempts!

So far in 1989, David VK3AUU has worked I4BXN, LA8LF, KI3W, AA4FQ, OZ1EME, HG0HO, JA4BLC, KF0M, EA2LU, K2GAL, KD8SI, WB2DGR, N1BUG, WA4NJP, DK1KO, I1TXD, K9MRI, W7FN, PA0INE, OK1MS, WA6MGZ, K2TXB, SK3LH, K1HWS and W7HAH for a total of 61 stations in 21 countries with 13 USA call areas. David has also had two SSB contacts with W5UN.

David says that anyone interested in trying with W5UN will need at least a six metre long yagi, about 100 watts and a good pre-amplifier. Dave is on 14.345 MHz most week nights around 1100 UTC, with a group of US EME enthusiasts. He also listens on 28.885 around 0000. VK3AUU is prepared to assist in arranging a contact from a suitable station. Dave's signal has been copied on a 3 element yagi, and generally peaks at better than 15 db above the noise at VK3AUU,

on his 76 element array. If you can hear him, there is a good chance that he will hear you, as he worked ZD8MB who used 25 watts and a single yagi.

A programme of Moon Tracking and other utilities for an IBM compatible is available for $10.00 from VK3AUU QTHR. Included also will be a ten page set of operating instructions for two metre EME contacts.

50-54 MHz DX Standings

DXCC countries are based on information received up to 15 June 1989. Cross-band totals are those not duplicated by six metre two-way contacts. Credit has not been given in columns 1 and 2 for contacts made with stations when 50 MHz was not authorised.

Column 1: 52 MHz two-way confirmed
Column 2: 52 Mhz two-way worked
Column 3:Cross-band (52 to 28 MHz) confirmed
Column 4:Cross-band (52 to 28 Mhz) worked
Column 5: Countries heard on 50 MHz
Column 6: Countries heard on 52 MHz
Column 7:50 MHz two-way worked (temporary listing - see below.)

Call Sign	1	2	3	4	5	6	7
VK8GB	42	42			13		
VK4ZJB	32	32				4	
VK2BA	31	32					18
VK2VC	27	27					
VK2QF	25	27					25
VK2DDG	25	26		2	12	3	
VK3OT	25	26			10		
VK3XQ	24	26			1	1	
VK3AWY	22	22					
VK2KAY	21	23					
VK5LP	21	22			9	1	8
VK2BNN	20	21					
VK4ALM	20	20					
VK4TL	19	19					
VK7JG	18	20				2	
VK4ZAL	18	18					
VK3AMK	17	17					
VK9XT	17	21					
VK3AUI	17	21					
VK3NM	16	17					
VK4ZSH	15	16					
VK2ZRU	15	16			1	3	
VK3ZZX	12	13					
VK9YT	12	14					
VK6OX	10	10	1	1			
VK6RO	9	9	3	3	7	3	4
VK4KHZ	8	10					
VK6HK	8	13			3	2	
Overseas							
JA2TTO	48	48			6		

A new column (7) has been added as from this month. This lists those 50 MHz contacts which have been supplied to me, and no distinction is presently being made, regardless of the State from which they have been received. These listings are now due for review, in the light of the just-announced relaxation by DoTC of the 50 MHz conditions. In the meantime, the present separation between 50 and 52 MHz will assist me to make a decision at the appropriate time. All Standings information (from day one) is now stored in the computer, so that any adjustments should be relatively straightforward.

A minimum of five countries confirmed (including VK) is required for an operator to be listed.

The list position is determined by the number of confirmed contacts. Where two or more operators claim the same total, those first date-listed with that total can only be displaced by another having a greater number of confirmed contacts.

The next list will appear in February 1990, and entries will need to be on my desk no late than 15 December 1989. Claimants are reminded that full details of all contacts are required; viz: date of contact, time in UTC, call sign of station worked, country, frequency (50 or 52 Mhz), mode, report sent and received, QSL sent and whether received. Split frequency contacts should be indicated. Please add your own call sign, signature and date.

I reserve the right to request and examine any QSL cards, which may be needed to support an application for listing. To assist your claim, a useful idea is to include photocopies of the front and back of QSL cards.

Closure

Keep in mind that 50 MHz F2 contacts from various points in the world should return sometime during September to November, and those looking for contacts will need to rise reasonably early. Contacts can start as early as 2000 along the eastern coastline from areas in the USA, Mexico, Caribbean and possibly South American areas.

South Africa may be a possibility from 0700 onwards. JA's will probably predominate for the other times of the day, but don't forget there may be DU, HL and VS6 stations scattered amongst them.

Closing with two thoughts for the month: "Any astronomer can predict with absolute accuracy just where every star in the heavens will be at half-past eleven tonight. He can make no such prediction about his young daughter", and: "The smallest deed is better than the grandest intention". The Voice by the Lake.

ar

POUNDING BRASS

Black Box Operators?

Gilbert Griffith VK3CQ
7 Church Street, Bright 3741

Many readers of this column will have remembered my mentioning the CW Operators QRP Club, and quite a few will enjoy being members. Non-members missed a repeat article in the Club's journal "Lo-Key" for June, by Ian Pogson. If you have been considering joining, this is a good excuse, and as a member you will be able to get the issue of Lo-Key to build this project. It is many years now since it was available as a kit, but all the parts, including the board, are readily obtainable. The circuit is more complicated than a single chip keyer, but you can follow the logic involved, and learn a lot more about how keyers work by building the "accu" keyer. Have a go!

Every month I read numerous magazines, articles and books. Naturally, I subconsciously assume that most Morsiacs would be reading along similar lines, at least in the field of interest here. Anyhow, in case you don't read EA, Jim Rowe (the editor) had a go at Amateurs in his June "Forum" column. Judging by the replies this month, his ideas met with some agreement amongst Radio Amateurs, myself included. Rather than have me go into the articles in depth, I suggest you get hold of them and see for yourself. His main point, of course, is that (many) Amateurs are merely "black box" operators. Or if you want to be derogatory to another group, "glorified CB'ers". If you take the trouble to think about this, it is a slur on those CB'ers, because they are doing precisely what they want, ie using black boxes to talk to each other. From what I have seen, verbal (ie not CW) content is much the same, whether you listen to 10 or 11 metres these days, with maybe a little less profanity on 10 metres.

One of the reasons I have not been on air much (rarely in fact!) was the poor quality of conversation on Morse as well. It was difficult to find someone to chat with about homebrew, sig reports etc, and I suspected others of giving me unfair reports about my own homebrew gear. Good reports, that is, when I *knew* there was heaps of chirp. I even had to explain a couple of times what chirp was in order to get a decent report!

I felt that my own operating practices were degenerating (?) at the same time; they certainly were not improving! Hence the break.

Maybe this is why I personally reckon that membership of the WIA should be compulsory, and that *all* CW operators join the CW Ops QRP Club, not only for their own good, but for the good of the respective club, or in the case of the WIA, for the good of Amateur Radio in general.

Well, just who is right? Do we "not have enough time" for all our interests, or is it just that we can't be bothered? Do we hope that newcomers to the hobby will take up the challenge again, or do we extract our collective "keys" and put in that extra effort that the future of Amateur Radio needs.

Your letters would be appreciated. Please include a SAE if you want a personal reply. Please . . . please, do *not* whinge about costs of this and that membership etc etc ad nauseum. Any qualified Amateur should be able to earn a few extra quid if he/she really wants to, or is that another matter entirely?

73
Gil

Lunar Eclipse, Microsats

Maurie Hooper VK5EA
11 Richland Road
NEWTON 5074

National Coordinator
Graham Ratcliff VK5AGR
Information Nets
Amsat Australia
Control: VK5AGR
Amateur check in: 0945 UTC Sunday
Bulletin commences: 1000 UTC
Primary frequency: 3.685 MHz
Secondary frequency: 7.064 MHz
Amsat SW Pacific
2200 UTC Saturday, 14.282 MHz

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the Amsat Australia net. This information is also included on some WIA Divisional Broadcasts.

From UoSAT-OSCAR-11 Bulletin - 189 22 June 1989

AO-13 Lunar Eclipse

On June 3 1989 at 22:00 UTC, G3RUH was observing AO-13 PSK telemetry, when suddenly he saw the battery voltage was falling rapidly; then there was no spin rate. Normally the solar panels stay near 8 degrees C, but now they were at -10 degrees C! Since the satellite spin rate was calculated from data taken from a sun sensor, everything indicated that there was a solar eclipse - but there were no predicted eclipses until November. Upon checking the Astronautical Almanac, he found that AO-13 was being blocked by the Moon! After 20 minutes AO-13 came out of the lunar eclipse and the telemetry indicated that everything was back to normal. So in keeping with his "detective spirit," G3RUH has produced the following table. AO-13 users should keep this table posted in the ham shack, so as to be aware when these lunar eclipses will occur and AVOID operating during these times.

Date	UTC HH:MM	DUR min	Orbit No	MA/256 Start	MA/256 End	Max Obs %
1989 Aug 31 (Thu)	07:09	33	929	13	25	9
1990 Jan 26 (Fri)	15:00	26	1240	25	34	85
1990 Feb 25 (Sun)	06:36	25	1302	70	80	8
1990 Mar 26 (Mon)	22:15	33	1364	115	128	11

Please Note: "Max Obs %" means "maximum obscuration" in terms of area of the Sun's disc. O=no eclipse, 100=total.

From UoSAT-11 Bulletin - 190 30 June 1989

****UoSAT D and E****

The engineering model is now almost finished and some flight hardware is already being produced. As you may know, both spacecraft consist of a stack of eleven module boxes, with the solar panels mounted on the four sides, on the top a gravity gradient boom of about six metres (fully deployed) and on the bottom the VHF and UHF antennas. The spacecraft measures about 34.5 by 34.5 by 60 cm and the total weight is about 40 kg. The Department of Mechanical Engineering at the University is making the flight module-boxes and attach-fitting for both spacecraft. Most of the experiments are in their engineering test phase, after which a flight-PCB can be produced for final integration by the end of August. Solar cells are being laid-out on the panels, now that we have a reliable method of sticking kapton on the panels (an insulating layer between the cells and the aluminium panel). These Gallium-Arsenide cells have an efficiency of 18 per cent and are produced by different manufacturers. By mid August, we expect the panels to be back at the University, tested and ready for integration. On UoSAT-D two transmitters are flown, one switchable between 1 and 2 watts, the other between 5 and 10 watts. The low power transmitter is used for continuous operation, the high power transmitter for short burst transmissions. Over the last few days, the bench models of the transmitters and modulators have undergone extensive testing. The design of the transmitters is by G3YJO and G7DSY, construction by Mark Allery, G7DSY.

Part 5 of "The First Flock of Microsats"

Software

The flight computer is programmed in a language which compiles or assembles into an image executable under an MS-DOS-like system. Compilers are available for a number of high level languages, but C is favoured by most project programmers. Executable images are uploaded to the flight computer using the transparent mode of the AX.25 protocol or an equivalent, error free, binary transmission protocol. Application programs will perform the following functions:

Packet Radio

For LUSAT, PACSAT, and WEBERSAT, NRZ-I bitstreams from the HDLC decoders to the computer, and similar bitstreams to the HDLC encoders from the computer, will be managed in software to implement the AX.25 protocol, the amateur radio version of the X.25 packet switching protocol. Unconnected beacon packets will transmit telemetry, satellite information, and bulletins. User stations will be able to connect to the satellite to query operating status, and obtain additional telemetry outputs in varied formats. The satellite receivers gather signal strength, which can be made available to the user, and which can be used in maintaining connection.

A packet bulletin board message store-and-forward capability will be provided on LUSAT and PACSAT, so that users can connect to the satellite and upload messages for forwarding to users who do not share a mutual accessibility with the satellite on a temporal or geographic basis. It is also anticipated that ground based packet BBS networks will use the satellites for message forwarding.

All of these functions will be configurable and alterable from the ground or by flight computer command.

Experiment Module Applications

The DOVE will contain application software to operate the voice synthesizer rapidly enough to avoid breaks in speech.

The WEBERSAT will use application software to control the camera and store picture data. WEBERSAT is more experimental in nature than the others and it is intended that the satellite be used as a software test bed for various digital video experiments.

Power Subsystem Management

The BCR solar array set-point must be adjusted to obtain maximum power from the solar arrays. In addition, the power level of the transmitter must be adjusted so that the power budget is maintained slightly positive, as averaged over an orbit.

Watchdog

A hardware watchdog resets the CPU if the on-board software does not toggle a line approximately each half second. This starts the ROM-based boot loader. In this mode, the transmitter is only switched on

periodically, sending a short telemetry burst at its highest power level. The on-board software can then be reloaded. The capability to hard reset the flight computer from the ground is also provided. The watchdog timer guards against problems which could cause the spacecraft to "lock up", as occurred with UoSAT 1 (UoSAT-OSCAR-9).

Launch and Deployment

Man-Assisted Separation

Deployment of the MICROSAT spacecraft from a man-carrying satellite (as demonstrated in the Iskra 1 and 2 spacecraft) will be by means of a modified launcher plate. An astronaut will hold the launcher plate and manually release the MICROSAT, via a release latch mechanism, into the space environment. This technique will be designed to minimise the possibility of human error in the launching of the MICROSAT. (None of the four MICROSATS in the first launch group will be deployed in this way).

Automatic Separation

Deployment of the MICROSAT spacecraft from un-manned vehicles uses techniques that have been proven over the last twenty years. The spacecraft is locked to a launcher plate by means of a tie-bolt and locator pins. The tie-bolt is severed by a pyrotechnic bolt cutter device. The pyrotechnic device is rated at the following levels:

Will Not Fire: 1 amp, 1 watt
Positive Fire: 3 amp,
Nominal Fire: 5 amp.

A separation spring is located concentric to the tie bolt, and will provide a positive separation velocity of from 1.0 to 1.5 metres per second, once the tie-bolt is severed. Straight line deployment is assured by the locator pins. A separation switch on the spacecraft side of the interface will enable the satellite electronics, while a similar switch on the launcher side will indicate satellite separation via the launch vehicle telemetry system. The latter switch gives the launch vehicle team positive proof that the MICROSAT was deployed.

On-Orbit Operations

The MICROSAT spacecraft are designed for autonomous operation. It is anticipated that command stations will not be continuously available and that any power emergency on board the satellite can be looked after by the flight computer. Software changes or additions will be made by command stations.

Downlink Performance

The three MICROSATS, which are primarily used to transmit and relay educational information and amateur radio communications in the form of AX.25 packets, must have adequate system performance to simple receivers. A BPSK downlink signal with an Eb/No of 0.6 dB provides a bit error rate (BER) of one error in 100,000. An additional signal margin of 10 dB, i.e. a 19.6 dB Eb/No, ensures a usable bit error rate. This error rate is considered acceptable under the AX.25 protocol, which detects errors and automatically requests retransmission, in order to guarantee accurate data reception. The following table shows the downlink performance of the system:

Spacecraft Transmitter Power (4.0 watts):	+6.0 dBW
Spacecraft Transmission Losses:	-0.7 dB
Spacecraft Antenna Gain:	+2.0 dBiC
Downlink EIRP:	+7.3 dBW
Downlink Path Loss (437 MHz at 3340 km):	-155.7 dB
Polarization Loss:	-3.0 dB
Atmospheric and Ionospheric Losses:	-0.3 dB
Isotropic Signal Level at User Antenna:	-151.7 dBW
User Antenna Gain:	0.0 dBi
User System Noise Temperature:	450 K
User G/T:	-26.5 dB/K
User C/No:	+50.4 dB-Hz
User Eb/No at 1200 bps:	19.6 dB
User Eb/No at 4800 bps:	13.6 dB
Required Eb/No for 10E-5 BER:	9.6 dB
Link Margin, 1200 bps, max slant range:	10.0 dB
Link Margin, 4800 bps, max slant range:	4.0 dB

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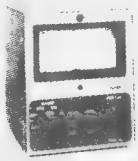

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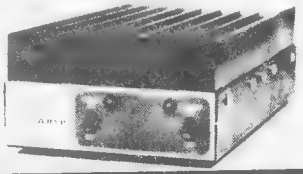

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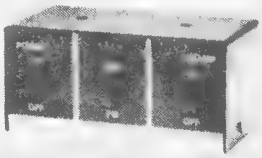

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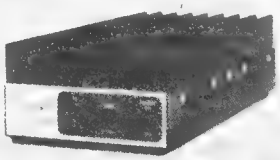

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Maximum slant range occurs when the satellite is on the user horizon. At closest approach the satellite will frequently be at a range of 1000 km or less, at which point the user link margins improve to about 15 dB at 1200 bps and 9 dB at 4800 bps.

At 1200 bps, adequate margins exist. When 4800 bps is to be used, it will be necessary for the user to improve station receiving equipment. This can be done by upgrading to a good quality dipole or steerable beam antenna and a GaAsFET preamp. It will also be necessary to provide for precise receiver frequency tracking, due to the increased bandwidth of the downlink signal. Performance of the satellite is expected to meet nearly all of the requirements for reception by users with simple equipment. Clearly, better results will occur with more sophisticated user stations.

DOVE is primarily intended to transmit education information in the form of telemetry and various stored announcements and must have adequate system performance to even simple receivers. For an FM system using conventional NBFM techniques, the modulation index is between 4.5 and 5.5. The FM threshold for such a receiver requires an input signal-to-noise ratio to the discriminator of very nearly 10 dB. In order to get adequate signal quality, a margin of 6 dB should be attained. Thus, an input S/N of 16 dB is required. This will result in an output S/N of nearly 42 dB, theoretically. Further, a user terminal with a noise figure as poor as 7 dB (corresponding to a noise temperature of 1160 K) is assumed.

Adequate reception using hand-held or equivalent equipment with poor antennas in poor locations (such as the inside of buildings) is desired. The following table shows the link performance under these conditions:

Spacecraft Transmitter Power (4.0 watts):	+6.0 dBW
Spacecraft Transmission Losses:	-0.5 dB
Spacecraft Antenna Gain:	2.1 dBiC
Downlink EIRP:	+7.6 dBW
Downlink Path Loss (146 MHz at 3340 km):	-146.3 dB
Polarization Loss:	-3.0 dB
Atmospheric and Ionospheric Losses:	-1.5 dB
Isotropic Signal Level at User Antenna:	-143.1 dBW
User Antenna Gain (HT)	-2.0 dBi
User System Noise Temperature:	1160 K
User G/T:	-32.6 dB/K
User C/No:	+52.8 dB-Hz
User Signal Level (in 15 kHz bandwidth):	11.0 dB

While the desired S/N is not attained at maximum slant range (near AOS and LOS) the signal is still at the FM threshold, which gives an output S/N of about 36 dB. At closest approach, the satellite will frequently be at a range of 1000 km or less, where the input S/N will be as large as 18 dB.

Any improvements to the receiving station will significantly improve this situation.

(This article should conclude in the next issue - Maurie VK5EA).

Satellite Activity for March/April 1989

1. Launches

The following launching announcements have been received:

Int'l Number	Satellite	Date	Nation	Period min	Apg km	Prg km	Inc deg
1989 -							
024A	Cosmos 2007	Mar 23	USSR	89.1	300	190	64.8
025A to 025H	Cosmos 2008 to Cosmos 2015	Mar 24	USSR	115.2	1510	1445	74.0
026A	USA 36	Mar 24	USA	94.5	503	482	47.7
027A	Tele-X	Apr 02	Scand	1304.1	35817	30510	0.1
028A	Cosmos 2016	Apr 04	USSR	104.9	1026	973	82.9
029A	Cosmos 2017	Apr 06	USSR	89.7	284	244	62.8
030A	Raduga 23	Apr 14	USSR	24h34m	36523		1.4
031A	Cosmos 2018	Apr 20	USSR	89.7	350	194	62.8

2. Returns

During the period one hundred and thirty two objects decayed including the following satellites:

1967-102A	Cosmos 184	Apr 02
1979-013A	Sage	Apr 11
1981-095A	Cosmos 1310	Apr 03
1989-007A	Cosmos 1993	Mar 27
1989-022A	Cosmos 2006	Mar 31
1989-029A	Cosmos 2017	Apr 19

3. Notes

1989-027A Tele-X a Scandinavian telecommunications and television satellite was launched on April 9, 1989, from the Kourou Space Center, French Guiana.

Satellite Activity for April/May 1989

1. Launches

The following launching announcements have been received:

Int'l Number	Satellite	Date	Nation	Period min	Apg km	Prg km	Inc deg
1989 -							
032A	Foton 2	Apr 26	USSR	90.5	402	225	62.8
033A	STS 30	May 04	USA	90.8	331	297	28.9
033B	Magellan	May 04	USA				
034A	Cosmos 2019	May 05	USSR	89.5	268	247	62.9
035A	USA 37	May 10	USA				
036A	Cosmos 2020	May 17	USSR	89.7	365	180	64.8

2. Returns

During the period seventy seven objects decayed including the following satellites:

1969-019A	Cosmos 206	Apr 22
1983-034A	Cosmos 1453	May 08
1985-114A	USA 13	May 11
1988-104A	Soyuz TM-7	Apr 27
1989-019A	Cosmos 2005	Apr 25
1989-023A	Progress 41	Apr 25
1989-032A	Foton 2	May 11
1989-033A	STS 30	May 08
1989-034A	Cosmos 2019	May 18

3. Notes

1989-033A Magellan was deployed from the orbiting STS 30 on May 04 1989. The spacecraft is to obtain a global map of Venus by means of a radar mapping device.

1989-035A USA 37 was launched by the United States Dept. of Defence.

Bob Arnold VK3ZBB

Report on the Third AMSAT-UK Colloquium 1988

Graham Ratcliff VK5AGR
AMSAT-Australia National Coordinator
GPO Box 2141
Adelaide 5001

(The Editors apologise for the delay in publishing this report in AR. There were several reasons for this, but the main problem was simply lack of space.)

International Amateur Satellite Meeting - 28 July 1988

Godalming - near the University of Surrey, Guildford, UK.

As 1988 was the 75th Anniversary of the Radio Society of Great Britain (RSGB) with many international visitors in the UK, the RSGB held an International Satellite Meeting on 28 July, chaired by NZART President and Amateur Satellite enthusiast, Terry Carrell, ZI3QL.

The meeting was intended to attract IARU representatives attending the 75th Anniversary and acquaint them with the goals of the Amateur Satellite Service. Unfortunately, the meeting attracted very few IARU people (one exception being David Wardlaw, VK3ADW).

Nevertheless, it is imperative that all those interested in the Amateur Satellite Service must work with their national societies NOW to protect, finance and therefore, continue the Service well into the future.

Two areas of concern were the potential loss of Amateur Satellite frequency allocations to Commercial Land Mobile, and the financing of future Amateur Satellites. Once an Amateur Satellite could be built in a garage and launched for "free". Not now! Typically, a "piggyback" launch can currently cost $1,000,000 for the paperwork associated with integration costs alone. The cost of hardware for a Phase 3 type satellite (ie: OSCAR 13) would also exceed US1 million. Therefore, the support of national societies will be needed to finance future Satellites. Many societies see the need to attract new members from, for example, computer enthusiasts. The Amateur Satellite Service with computer tracking, packet radio and satellite telemetry capture can, and has already, attracted many to Amateur Radio. To progress into the next century, forward thinking national society administrators are needed to budget the finance for future Amateur Satellites.

Personally, I have argued at three WIA Federal Conventions that the IARU should be the body responsible for administrating such an International Amateur Satellite Fund. If the IARU component of your WIA membership was raised by as little as 50 cents per annum, sufficient funds could be raised over the next ten years to support the Amateur Satellite Service into the 21st century, provided that all member nations of IARU follow our example.

Amateur Satellite Engineer's Meeting - 29 July 1988

University of Surrey, Guildford, UK.

This meeting was chaired by Dr Martin Sweeting, G3YJO, of the University of Surrey to encourage groups who intend to build future Amateur Satellites to present their plans for coordination.

Karl Meinzer, DJ4ZC and Werner Haas, DK5KQ represented AMSAT-DL (Germany) with their proposed Phase III D project. An enhanced version of OSCAR 13 with a high-powered Mode L transponder.

Jan King, W3GEY and Bob McGwier, N4HY represented AMSAT-NA (North America) with their proposed Phase IV Geostationary Satellite and Microsat (PACSAT) projects.

Martin Sweeting, G3YJO represented the University of Surrey/AMSAT-UK with their proposed UoSAT C and UoSAT D & E projects.

One of the main topics for discussion at this meeting was foreseeable availability of launches. A significant point raised was that the Amateur Satellite Service is no longer alone in its quest for obtaining "free" or, at least, low cost launches. Many scientific (amateur and professional) groups world-wide are noting with envy the past achievements of the Amateur Satellite Service, and aim to compete for these same launch opportunities. This is a good reason for international co-ordination to strengthen our competition for these limited launch opportunities.

Each group then presented an overview of their proposed satellite project(s). The rest of the day was spent in open discussion on the technical challenges faced by each group in attempting to achieve their respective goals. The interaction between the various groups was a pleasure to watch as everyone added their expertise to the discussion, for the benefit of all.

The variety of challenges was quite formidable. Topics covered included methods of spin stabilisation, thermal design for a non-spinning geostationary satellite, heat pump designs, collapsible high-gain yagi antennas, high powered solar generators, and finding facilities suitable for constructing a satellite the size of Phase IV (as the completed spacecraft will not fit through most doorways or into most elevators). There was much discussion about availability of the various unique pieces of hardware required for these projects, preferably at the least cost (nil where possible). A proposal by AMSAT-DL was that they actually design and build a piece of hardware that would revolutionise spacecraft spin stabilisation. AMSAT-DL has in the past successfully carried out such development work in producing the separation mechanism used in the Ariane multi-payload separation sequencer.

The unfortunate side of this meeting was (as always) that it was too short. Much was achieved all the same. Although intended primarily for "builders" of satellites, no one was turned away if they wanted to attend. If you ever have the opportunity to attend such a meeting I suggest you take it. Not only will you find it extremely interesting, but it will open your eyes to the incredible effort behind the scenes by a dedicated few to design and build our often "taken for granted" and sometimes even criticised Amateur Satellites. Next time you say "why did they do that and not this?", I can assure you that the decision would not have been made lightly.

The Third AMSAT-UK Colloquium - 29 July 1988

University of Surrey

As in 1987, the whole Colloquium was very "professionally" run and organised by Ron Broadbent (G3AAJ), Dr Martin Sweeting (G3YJO) and their many volunteer helpers. This was reflected by the number of attendees, in particular the (increased) number from overseas. Approximately 160 (representing 22 countries) registered for the whole weekend and many more attended some of the sessions over the two days.

As you may remember from my report on the 1987 Colloquium, the major "issue" discussed was AMSAT-NA's "Phase IV-Geostationary Satellite" versus AMSAT-DL's "Phase III-Molniya Orbit Satellite" projects. This was not the case at the 1988 Colloquium, after Jan King, W3GEY presented the engineering aspects of the Phase IV project versus the "political aspects presented by Vern Riportella/WA2LQQ last year. The audience, although not totally in favour of the concept of the Phase IV Project, were very interested to hear Jan's presentation on the technologies involved in designing and building such a satellite. There was not one objection to the project, if AMSAT-NA could raise the funds to go ahead - this was in complete contrast to Rip's experience in 1987.

Also, because of the cost of these large Phase III & IV satellites, the audience was very pleased to hear what the University of Surrey group and AMSAT-NA had to offer in the early 1989 timeframe with the launch aboard an Ariane launch vehicle of six Low Earth Orbit Satellites, two UoSATs - UoSAT D & E (effectively the proposed UoSAT-C divided in two as this launch with NASA has been delayed possibly into the 1990's), plus four MicroSats designed and built by AMSAT-NA. Three out of the six are planned to carry "general access" Amateur Packet Radio Bulletin Boards using the AX.25 packet protocol. These satellites will be a much-enhanced version of Fuji-OSCAR 12 BBS Store-and-Forward concept needing lower uplink and downlink requirements.

It was interesting to note that all of the launch proposals involved Ariane, and no mention was made by the Americans of the possibility of a launch on the US TITAN or the Space Shuttle.

The Lecture Program - Saturday, 30 July 1988

For many attendees the star guest of the Colloquium was unquestionably Leonid Labutin, UA3CR, of the USSR, who was at last able to be in Guildford - a positive sign for Glasnost. In 1987, Leonid had to cancel his visit at the very last minute.

However, even though Leonid was a well-favoured speaker, I would have to say that Dr Geoff Perry of Kettering Boy's School fame, once again, stole the show with his most entertaining presentation on the Chinese Space Program. Once again, I recommend that if you ever have the opportunity of hearing Geoff (who is not an Amateur) - DO NOT MISS IT!!!

The main aim of the AMSAT-UK Colloquium is to have something for everyone, from the beginner to the more experienced satellite user. As you can see from the lecture program outlined below, this was again successfully achieved.

Supplementing the lecture program, there was ample opportunity during the Colloquium to meet informally, not only with other satellite users, but many of the satellite builders and Command Stations. Beginning with a social drink in the University bar on Friday night this meant that these individuals were kept extremely busy fielding questions. Nevertheless, the feedback received during these discussions was of great benefit to all who participated. Most left the Colloquium wiser and happier, having had their questions answered by people who should know. Also, the Command Stations and satellite builders had a much better appreciation of what the end-users wanted by way of Amateur Satellites in the future.

Welcome by Martin Sweeting

As the host at the University of Surrey, Martin Sweeting G3YJO, opened the Colloquium for 1988 and expressed his appreciation of the great interest that the meeting caused in all three IARU regions. Next, Dr Arthur Gee (GB2UK), Chairman of the AMSAT-UK, commented in his welcoming speech on questions of Amateur Radio via Satellite. He stressed that, in this area, Amateur Radio is again following its original form of technical experiments for self-study in the fields of electronics as well as wave propagation and antennas.

The Royal Observatory - Max White

The honor of the first speech was given to Max White who, despite not having an Amateur Radio licence, is thoroughly familiar with the species "radio amateur". Max spoke about the Royal Observatory in Greenwich and then moved on to describing the co-operation with radio amateurs in the observation and subsequent calculation of the orbits of artificial satellites. He comprehensively explained the measurement techniques using laser beams.

At this point, he could not resist making the comment that the observatory is located under the incoming flight path to an airport and that the high energy laser is perhaps not quite without complications.

He, therefore, closes his own eyes whenever he flies over the observatory. Better safe than sorry! Via certain secret channels, he allegedly learned of a wish to use his laser cannon to shoot down the COSMOS-1861 satellite, so that COSMOS-1862 would be launched earlier than planned. This replacement had the two new Amateur Radio transponders, now known as RS10/11!

Report on the IARU Meeting - Terry Carrell ZL3QL

Terry reported on the topic of co-operation between IARU and AMSAT organisations. A few days prior to the Colloquium, representatives of 35 national societies met with representatives of the various organisations and groups that are involved with the construction and operation of Amateur Radio Satellites.

First of all, ZL3QL indicated that the upcoming World Administrative Radio Conference (WARC) is scheduled for 1992. During this conference, the frequency needs of the individual services will be established until far into the next century. The danger, as seen by the IARU, lies mainly in the fact that the Amateur Radio Service will come under pressure in the range above 30 MHz, primarily the bands 70, 23 and 12 cm. ZL3QL advocates that the national societies should become more involved in the future with the Amateur Satellite Service than in the past. Preparatory meetings must occur so that the IARU can then speak with a collective voice on this important matter in the future. Following the possible loss of the above-mentioned bands, the Amateur Satellite Service would no longer have a future.

Karl Meinzer (DJ4ZC) suggested that the IARU should consider the possibility of each member of every Amateur Radio Society contributing a certain amount for the construction of satellites.

One major outcome of the meeting was the agreement that AMSAT-UK should co-ordinate all frequencies for the Amateur Satellite Service for all three regions.

In conclusion, ZL3QL pointed out that the IARU can less make decisions than express recommendations.

The Sputnik Shock - NORAD Spacetrack Network - Max White

Max again took the floor, and reported on the Space Command in the USA. This institution was founded shortly after the launch of Sputnik I in October 1957, after finding that no agencies in the USA were involved with the observation and measurement of artificial celestial bodies. Rapid development of observation stations began, not only in the USA, but also in Iran, Chile, Australia, India and several other countries. Viewing conditions were quite often unsatisfactory, so it appeared that optical observation and tracking would no longer suffice. Plans were soon developed to measure the satellites with the help of radar, initially using a 25 metre reflector in Massachusetts, soon followed by others. All were designed to track only a single object. If several targets needed to be tracked simultaneously, these reflectors were no longer adequate. This was the inception of an "electronic fence" to protect the entire USA from unpleasant surprises. In the beginning, the equipment radiated 800 kW on 217 MHz and was capable of tracking all flight objects in a near-earth orbit and of measuring their orbits. In the meanwhile, the equipment has not only been constantly improved, but has also moved very close to the 70cm amateur band. The radar equipment of the latest generation operates in the area of 422 MHz with a beam width of only 2.1 degrees!

Orbital Concepts - Jeff Ward G0/K8KA

Following this impressive NORAD information, the last address of the morning was concerned with simpler matters. Jeff very clearly explained such mysterious concepts as MA (mean anomaly), apside rotation, SMA (semi-major axis), etc. This was supported by several well- made overheads prepared by Craig Underwood. This presentation succeeded in explaining these rather abstract concepts very well. One question was the subject of much discussion over the weekend. The question was, "Why is the Mean Anomaly in the Keplerian Elements expressed in the range 0 to 360, when the Mean Anomaly in printouts from satellite tracking programs is expressed in the range 0 - to 255?" Do you know the answer?

JAS-1 Film - JA1HQG

Six reports were scheduled for the afternoon session, among others, a review of the two British UoSATs as well as the planned UoSAT-C and a film about the development and construction of JAS-1. During the presentation of this professionally produced 16mm film, comments were heard that it must have cost more than the entire JAS-1. The film gave the impression that the satellite was promoted, not by radio amateurs in private work, but rather by financially strong companies. This impression was reinforced even more when the various laboratory and measurement facilities came into view. It would probably look the same if ANT or MBB of West Germany were to build Phase 3D.

When the film claimed how effective the satellite JAS-1 was, the groans of several of the audience were hard to miss! The power budget for this satellite is unfortunately a cause for concern. If FUJI-Oscar-12 really was as good as claimed, the frequent suspension of operation due to power shortage would not have been necessary.

After much applause for the film, JA1HQG answered questions regarding the successor to JAS-1 which is to be an identical model, but with significantly improved batteries, as well as more effective GaAs solar cells. JA1HQG explained that these items were sinfully expensive and he comically demonstrated how JARL/JAMSAT were playing one commercial supplier off against the other to get the lowest possible price. The orbit will also differ slightly from that of JAS-1, but will basically offer the same sort of coverage.

Report on OSCAR-13

Returning from the Far East to Europe, Martin Sweeting introduced Karl Meinzer. There was appreciative applause from the audience, indicating that many had already experienced the recent successful beginning of operations on OSCAR-13. DJ4ZC explained to the international audience why OSCAR-13 could not be released for general operation immediately after launch, but nearly six weeks later. Using a 1:5 scale model he illustrated how OSCAR-13 had to be turned so that the antennas would

point towards the earth.

At the start of his presentation, he especially commended the control stations which had provided outstanding help in determining the orientation and performing the orbital manoeuvres, namely, Peter Geulzow DB2OS, Graham Ratcliff VK5AGR, Ian Ashley ZL1AOX, as well as James Miller G3RUH, and Stefan Eckart DL2MDL. VK5AGR and ZL1AOX had been particularly involved with the distance (ranging) measurements, to be enable DL2MDL and Phil Karn KA9Q to calculate the Keplerian elements based on the acquired data. Finally, James Miller provided the analysis of the orbit on which to base the operating schedules for the various transponders. With a special round of applause, the audience expressed its thanks to the above mentioned Command Stations for their contributions. Karl Meinzer said everything had gone so perfectly with OSCAR-13 so far that it raised doubt. Is 13 really an unlucky number?

Disappointment then set in when the RUDAK experiment could not be activated. In the meanwhile, attempts to get the experiment running were underway using some new software programs (this is still the case at the time of writing this article - so do not give up on RUDAK yet - remember it took months to activate UoSAT-OSCAR-11 and look how successful that has been ever since). The testing of RUDAK can be monitored on 435.677 MHz, since this beacon is quite audible even with small antennas.

Report on the UoSAT's - Jackie Radbone

As in the previous year, Jackie again gave a fine overview of the satellite program of the University of Surrey. She especially concentrated on the UoSAT-C satellite presently under construction, which will have a significantly improved computer with more than ten times the memory of the first two UoSAT's. In addition to the other experiments, this will improve the picture transmission. Although a launch date for UoSAT-C was initially planned for the end of 1988, a two year delay is now expected, so that the earliest launch opportunity will be around 1990/91. However, as mentioned earlier UoSAT-C payloads are now being divided between UoSAT D & E to be launched aboard an Ariane launch vehicle in the June 1989 timeframe.

Project Hart

The program continued with a presentation by Dave Rowan on the British project called HART. This project involves "flying" a transponder on a balloon. Dave told the audience how the idea for this evolved during a RSGB dinner in Birmingham in March 1987. Together with Richard Limebear, he drew the initial concepts for the circuit on the back of a menu.

After many meetings, the basic concept was established - namely, an uplink on 435 MHz and downlink on 145.9 MHz, transponder bandwidth of 10 kHz with a power of 300 mW. The transmitting and receiving antennas were aligned for vertical polarization. So that even weak stations would have a chance, there was to be no AGC. The transponder was completed and ready to fly, but was still waiting for a licence. Recently it became known that no licence would be forthcoming in Great Britain, due to the overcrowded airspace. Should the entire work over several months be for naught? No, because in the interim, Nico Janssen PA0DLO, had offered to apply for permission to fly it in Netherlands.

The latest word suggested that it looked very positive for a balloon launch, probably in the autumn. Here history is being repeated: over 25 years ago Karl Meinzer wanted to launch his first transponder from Germany. In those days, the authorities also refused permission, therefore making it necessary to take the route through the Netherlands. Only after several launches were completed there, without incident, was it possible to perform more than 60 ARTOB launches from Heessel under the direction of Fritz Herbst DL3YBA. The South Africans also had problems launching balloons, as they described during the presentation of their BACAR project.

BACAR - A Family Outing

Using impressive slides, Hans van de Groendahl ZS6AKV, showed activities south of the equator. As with the ARTOB undertakings in the 60's, the difficulties being encountered now in South Africa are familiar. Namely, flights beyond the country's borders, inability to separate the transponder, too much output power from the emergency beacon during search operations, etc. All of this had happened about 25 years ago in Hanover and vicinity. Only one aspect distinguished South Africa from the heaths of Northern Germany, namely that people were all wearing light summer clothing. The ARTOB searches called for warmer clothing, along with a lightweight stepladder for climbing in over pasture fences. Hans explained that in the BACAR project (Balloon Carrying Amateur Radio), AMSAT-SA was guided by the following considerations :

Design, Development, Construction and Testing
Balloon Tracking similar to Satellite Tracking
Map Reading
Radio Navigation - Direction Finding
Encoding/Decoding of the Telemetry
FUN - with all the Family Involved

In the meanwhile, over 25 launches had occurred, of which 22 were very successful, ie: the transponder was recovered. One recovery turned out to be more difficult. The point of impact was readily determined and two teams set off to recover the transponder. As they approached and took another bearing, they discovered the bearing had altered. This was repeated several times until the solution to the puzzle was found. All transponders were clearly marked with a request that the equipment should be taken to the nearest police station. A farmer had found the transponder shortly after the landing and was bringing it to the police, his farm truck becoming the moving target.

During the past year a transponder from 29.390 to 144.340 MHz was put into action. In addition to two beacons in the 2 metre band, a beacon on 51.384 MHz is occasionally being flown. A mode-L transponder is also being considered for the future in order to gain experience with transmitters and antennas on 1269 MHz.

Chinese Space Programme

For many, Geoff Perry's presentation would have been the most entertaining of the whole Colloquium. Geoff, at this best, described how he and the group at Kettering Boy's School received and decoded the radio transmissions from the first two Chinese satellites. Believe it or not, the signals consisted of a one minute cycle of alternate music and telemetry. The first 40 seconds were devoted to a repetition of "Tung Fang Hung" - "The East is Red" - followed by an interval of five seconds, followed by ten seconds of telemetry and, after a further interval of five seconds, the complete sequence is repeated. If you are interested in this fascinating pastime, I have an audio tape of Geoff's presentation and an eight page article on the subject.

AMSAT-UK Annual General Meeting

The AGM was like most club or society AGM's, namely, reports from the various office bearers. It would be remiss of me not to mention the incredible amount of support AMSAT-UK with its 4000 plus members gives financially to the Amateur Satellite Programme. In 1988 they paid £10,000 sterling towards the transport costs of OSCAR-13 from Germany to the launch site of Kourou, French Guiana, plus continued financial support for the work carried out at the University of Surrey, in particular the UoSAT Command Station in 1987 and the general access Amateur Packet Radio Transponder to fly on the UoSAT-D spacecraft in 1989 (to the tune of £25,000 over two years). Also they have pledged further funds to the launch cost for Phase IIID. I suggest that if you have the opportunity to support AMSAT-UK by becoming a member you can rest assured that your donation will be put towards the enhancement of the Amateur Satellite Service. AMSAT-UK publishes an excellent bi-monthly publication called "OSCAR News" which is well worth the minimum annual donation of £16.75 which includes airmail postage. For a "membership package" send 4 IRC's to AMSAT-UK, 94 Herongate Road, Wanstead Park, London E12 5EQ England.

The Saturday Night Social Evening

The highlight of the social evening was an auction conducted by Ron Broadbent G3AAJ, the Honorary Secretary of AMSAT-UK (actually he IS AMSAT-UK if the truth be known!) This year some excellent Amateur Radio equipment had been donated by commercial suppliers and AMSAT-UK members and the skilful auctioneering of Ron saw many £'s collected towards offsetting the above mentioned commitments by AMSAT-UK. This evening alone would be another good reason why you should attend an AMSAT-UK Colloquium if you ever have the chance to be in the UK at the time.

The Lecture Program - Sunday 31 July 1988

This part of the program covered future

expectations, in addition to presentations by Ray Soifer W2RS, Leonid Labutin UA3CR, Michael Hodgart UoS Team. Ray spoke on the subject of "Low Power EME Communications", in other words, the practicalities of using an Amateur Satellite Station for QRP EME work - most interesting. Leonid, with the help of an interpreter, gave a most entertaining and sometimes humorous presentation on the Polar SkiTrek Expedition and the up and coming future Russian Amateur Satellites and Amateur Radio activities from the Russian Space Station "MIR" (which of course happened during November/December 1988). Michael's presentation on Spacecraft Attitude Control with reference to the UoSAT's, although relatively technical, gave many attendees an appreciation of the difficulties involved in maintaining the attitude of UoSAT type spacecraft using gravity gradient stabilisation.

Knut Brenndorfer/DF8CA had the unenviable task of presenting a paper on RUDAK which should have been quite exciting, but unfortunately the RUDAK team already had grave suspicions that this new Packet Radio experiment on OSCAR-13 was not performing as expected. Attempts to date had been unsuccessful in initialising RUDAK which had been very frustrating for the RUDAK team, as the module was functioning reliably up until launch from Kourou. An exact copy of RUDAK has also been operating flawlessly from a water tower in Munich, West Germany for over two years. This, combined with the many hundreds of hours spent on the development of RU DAK, made this failure even harder to bear. However, the RUDAK team had not entirely given up their attempts to activate RUDAK and maybe, given some time and patience, RUDAK will once again spring to life. There is a considerable amount of information available on RUDAK, but it has not been widely distributed as yet. As soon as RUDAK is confirmed to be operational, there will, I am sure, be a flood of information on RUDAK and the equipment required to use it.

Bob McGwier/N4HY, gave an excellent presentation on Digital Signal Processing (DSP) Demodulation and Modulation Techniques. The most fascinating concept of DSP is that with one - yes, just one - DSP Modem, Amateurs should be able to replace the myriad of Modems they currently use in shack for Packet Radio, Decoding PSK and AFSK Telemetry from Satellites etc. Simply, the heart of the DSP modem is an extremely fast chip which requires only software to be changed to handle all the different "standards" used in Amateur Radio with this "one" piece of hardware. Bob hopes that the Tucson Amateur Packet Radio (TAPR) will produce a DSP kit in the early part of 1989 once the major thrust is over of getting the AMSAT-NA's Microsats Project off the ground.

Bob and Jan King/W3GEY then continued to outline the future activities of AMSAT-NA which include the Low Earth Orbit Microsats (scheduled for launch June 1989) and the Geosynchronous Phase IV Satellite (proposed launch 1992). The Microsats are so named because of their relatively small size, a 9 inch (23cm) cube, weighing less than 10 kg. The major interest in the Microsats is that at least three will carry "general-access" packet radio transponders similar to those successfully flown on JAS-1 (FUJI-Oscar-12). These packet radio transponders will, at the outset, use exactly the same modulation and demodulation techniques used by JAS-1, so NO new equipment will be required if you have JAS-1 capabilities. If you would like more information on the Microsats and/or DSP project send an A5 size envelope and a 65 cent stamp to AMSAT-Australia, and I will send you a 22 page booklet on the Microsats and a seven page booklet on the DSP project.

Jan presented the Phase IV project. The audience was fascinated by the number of problems that such a large and specialised spacecraft presented to the designers and builders, and not the least, the costs involved to overcome these obstacles. As you have probably gathered, the Phase IV project has been reduced from the original proposal of three satellites to a single satellite, which means that it can only offer a coverage to, at best, one third of the globe. Financial support for this project may come from the Pacific Region which may mean that coverage will include parts of Australia, the Pacific basin and the bulk of the Unites States. Time will tell. I have audio tapes of these sessions if anyone is interested. Send me an SASE for details.

During this session, **Karl Meinzer/DJ4ZC**, presented the **Phase IIID Project** proposed by AMSAT-DL which, with the support of the European Community, seems certain to go ahead. Phase IIID is an enhanced version of Phase IIIC, particularly in the area of the Mode L transponder with a high power output, which hopes to offer realistic land mobile type operations. The other interesting aspect of the Phase IIID project is that the size of the spacecraft is large and therefore the power capability is also quite large, which means that a significant number of extra experiments could be carried aboard Phase IIID - so, if you have any ideas for a worthwhile experiment that could be flown aboard Phase IIID that could take advantage of a 57 degree inclination, highly elliptical Molniya type orbit, then do not hesitate to write to me with your proposal which I will pass on to AMSAT-DL for consideration.

Jacky Radbone, in her presentation, covered the future UoSAT-C Spacecraft which, as already mentioned, has been divided into UoSAT D and E, which is scheduled for launch with the four Microsats in June 1989. The significance of these two UoSAT satellites is that for the first time they will carry a "general access" packet radio transponder, as well as the more familiar UoSAT scientific payloads which this time will include quite a few new and enhanced experiments utilising the relatively new family of "Transputers", ie: high speed parallel processing computer chips.

As I have already said, the AMSAT-UK Colloquium in 1987 and 1988 were extremely worthwhile, so if you have the opportunity to attend - do not miss it. Finally, if you would like to hear the audio from any of the presentations at the 1988 Colloquium, send me a blank audio tape, plus a donation of $5 to AMSAT-Australia for each 90 minute tape. Please include a list of the presentations you would like on your tape(s). I also have copies of the AMSAT-UK 1988 Colloquium Papers which are available from AMSAT-Australia for a donation of $15.

AMSAT OSCAR-13 Command Station Seminar - 2-4 August 1988

Marburg, West Germany

The only reason that I had the opportunity of attending the AMSAT-UK Colloquium and associated activities in 1988 was due to the successful launch of AMSAT-OSCAR-13 on 15 June 1988 from Kourou, French Guiana, which meant I had to attend a post-launch Command Station Seminar which was organised to coincide with the AMSAT-UK Colloquium.

The Seminar was convened by AMSAT-DL in Marburg, West Germany and was chaired by Karl Meinzer DJ4ZC. Those attending the Seminar were Peter Guezlow DB20S (Senior AO-13 Command Station), Stefan Eckart DL2MDL (RUDAK Team), Gerhart Metz DG2CO (RUDAK Team), Ian Ashley ZL1AOX, Phil Karn KA9Q, James Miller G3RUH and myself.

The agenda covered the following topics :-

1 The AO-13 Spacecraft
   a) Hardware
   b) Software
   c) Future Software Developments
2 Command Station Software
   a) Operations
   b) Weaknesses
   c) Revisions
   d) Attitude Determination by G3RUH
3 Spacecraft Operations for the Next Two Years
   a) Spacecraft Constraints
   b) Transponder Operations
   c) Beacon Operations
   d) Other Experiments - SERI Solar Cells
   e) Further Operational Automation
4 RUDAK & Mode S Operations
5 Open Discussions

As you can see from the above agenda, the three days were very intensive, to say the least. No decisions were taken lightly. Karl outlined in very concise terms what the constraints of the satellite hardware and software meant in terms of possible satellite orientations and subsequent operating schedules. Then, with the help of solar illumination charts prepared by James Miller G3RUH, the Command Stations collectively assessed the best compromise between satellite attitude and operating conditions for the next two years (subject to change as required).

Having decided the satellite transponder operating schedules, some time was then devoted to deciding what duties each Command Station would perform over the next two years. Peter was designated as the "Senior" Command Station and would be responsible for changing the attitude of the spacecraft when required to maintain sufficient solar illumination and altering the transponder operating schedules to suit. I was allocated the task of updating the RTTY messages transmitted on the beacon telemetry plus collecting the data from the experimental SERI solar cells. James was given the task of calibrating the Sun and Earth Sensors and developing software to automate the spacecraft attitude determination and I was

subsequently coopted by James to help in the data collection for this process.

Each Command Station who attended the Seminar was presented with a certificate with an endorsement which read "He is thus certified by AMSAT to be qualified as responsible AMSAT-OSCAR-13 controller, an operator without restriction". On the lighter side, each Command Station was presented with an AMSAT-DL umbrella to protect us from the inevitable "showers of criticisms" for making the wrong decisions as to satellite attitude and operating schedules.

The collection of telemetry data from OSCAR-13's PSK beacon telemetry and the preparation of RTTY and PSK messages for OSCAR-13's beacon has been the main reason for the delay in submitting this report to the Federal Office of the WIA for inclusion in "Amateur Radio". Ever since my return from Germany, I have been taking my lunch hour from work any time between 10 am and 3pm to come home and collect Sun and Earth Sensor data and upload new RTTY and PSK message blocks. As a result of my RTTY messages on OSCAR-13, I have received over 100 letters from Amateurs around the world who would like to learn more about what makes a satellite like OSCAR-13 work. Add to this another 550 letters that I have answered as the National Co-ordinator for AMSAT-Australia between 1 January and 31 December 1988, plus producing a monthly AMSAT-Australia Newsletter for almost 300 subscribers here in Australia and overseas, may help explain the delay in producing this report. (And then we couldn't find space to publish it until now! Sorry, Graham! Ed.)

However, I must say that I have never enjoyed my hobby as much as I have in 1988. Therefore, if I can ever be of any help to anyone interested in the Amateur Satellite Service then do not hesitate to write to me, c/- AMSAT-Australia, GPO Box 2141, Adelaide 5001. (Please include an SASE) or you can phone me between 6pm and 8pm any evening on (08) 297 5104 or contact me on the AMSAT-Australia Net every Sunday night at 1000 UTC on 7.064 MHz during the summer, or 3.685 MHz during the winter.

VK0E : Pirate Operator

Have you worked this station? Many overseas operators have, (W's, JA's and Europeans) with QSL's arriving monthly. Operating on 14MHz, 0600-0800 UTC, CW exclusively. He has been heard occasionally 1200-1400 UTC by SWL's. Your help in tracing this operator would be appreciated. Any information to Federal QSL Manager, 2 Moss Court, Kingsley, WA, 6026. ar

ALARA

YLRL 50th Anniversary Convention

Joy Collis VK2EBX
PO Box 22
Yeoval NSW 2868

The YLRL 50th Anniversary Convention was held in Hawaii from 27-30 June. YL's from many countries attended, including New Zealand, Japan, Sweden, Germany, Italy, England, Mexico, Poland and the Netherlands. (I am currently unaware of any VK YLRL members attending.)

Besides the actual business of the Convention, tours were conducted of Fern Grotto, and Waimea Canyon WWVH-Missile Tracking Station. A YL-OM luncheon and various other functions and activities, including a luau, were held.

Each YL was presented with a 50th Anniversary souvenir pendant as a memento of the occasion.

The ladies got on-air, when time permitted, from the Kauai Amateur Radio Club shack, giving many people a chance to work them for the YLRL 50th Anniversary Award.

A great time was had by all.

ALARA's Anniversary gift to YLRL was a selection of gift spoons from each State of Australia, plus two key rings, a brooch and a scarf. A congratulatory certificate, with caligraphy done by Ann VK4ANN was included. Paper with an Aboriginal motif was used to wrap the parcel.

General Meetings

ALARA General Meetings are held on air on the fourth Monday of each month, except December. Time: 1030 UTC (1000 UTC during daylight saving time.) Frequency: 3,580 ± QRM.

This is the opportunity for members to have their say in the running of ALARA, and bring forward any matters they would like discussed.

Bits and Pieces

Fourteenth birthday luncheons were held by VK3 and VK5 ALARA members on 30 and 23 July respectively.

Kirsti operated from Svalbard in early June with the callsign VK9NL/JW, making many people happy with a first YL contact into that country. Hope the climate did not prove to forbidding, Kirsti.

Ivor Stafford VK3XB received an Award of Honour Certificate in recognition of his assistance to, and support of, ALARA over the past 14 years.

This year marked the tenth Anniversary of BYLARA (British Young Ladies Amateur Radio Association). Many activities were planned, including rallies at various locations around the country. Pink and grey souvenir scarves are available to mark the occasion. Cost: £3, plus 30 pence postage, or equivalent to: Iris Osborne G0FIW, "Alacoo" Tan Lake, Little Clacton, Clacton-on-Sea, Essex, CO16 9PS England.

Belated congratulations to Val VK4VR for gaining First VK-YL in the WARO Contest in April.

The ZM prefix is being used by New Zealanders for the remainder of the year to mark the Commonwealth Games.

Doreen EL2DK and OM Bill EL2WK have been frequent visitors on the YL Net on Mondays at 0600 UTC, 14.222 MHz. Another rare YL country. They operated with the 6Z prefix during July.

Melva ZL4IO talking to OM Ted ZL4AOI from the shack of Maria VK5BMT.

Maria VK5BMT was pleased to have a visit from Melva ZL4IO. Melva was able to call home to her OM Ted ZL4AOI while with Maria.

New Members

Welcome to DX member Audrey G0CTQ. Audrey is often on the "222" YL net on Mondays.

Change of callsign: Hallie, formerly VE6AUP is now VE6YW.

That's it for this month, 73/33,

Joy.

INTRUDER WATCH

Report for May 1989

Bill Horner VK4MWZ
26 Iron Street
Gympie 4570

UTC Freq (kHz)	Mode	Date	Time	Id	Comments
3645	p	26	0930-0932	.	"Put-put" pulse
3590-3620		27, 28, 29, 30	0850-1200+	.	OHR. Bureau of Mineral Resources Seismic Ship ????
7000-7002	mni	dly	1140-1205	.	T/C f1b. 2x LSB etc.
7002.5	a1a	dly	1200-1225	.	barely audible
7006.5	f1b	mni	0533-0840	.	
7008.5	f1b	24.04	0540	.	
7020	a3e	mni	1200 +	.	Asian BC stn.
7023.5	2x r7b	05	1010	.	
7041.5	?	22.04	2121-2134	.	3 kHz wide.
7047	?	28.04	2347	.	Teletype wheel
7068	f1b	03	1100	.	
7080	n0n	26.04	1206	.	foreign
7097	f1b	26.04	1215	.	fast dots
14002.5	f1b	01	0540	.	
14003.5	f1b	23.04	1140	.	
14006.5	f1b	07	0750	.	
14011.5	f1b	15	1115		
14023.5	f1b	dly	0358-1055	.	
14066-14069		dly	0439-1221	.	Teletype wheel.
14050	a1a	mni	1001-1008	PKJ	calling CPQ
14070	a1a	01	1030-1034	VBX	calling VPO
14070-14083		dly	0319-1222	.	Teletype wheel
14073 +-	a1a	dly	1355-1456	VRQ	calling CQ
14117-14124.6	f1b	dly	0306-1224	.	some FAX
14109	a1a	24	0935-0945	NZB	calling ZBK
14121-14123		mni	0530-1405	.	multi modes/channel
14125-14130	mni	mni	0220-1403	.	multi modes/channel
14140.5	a1a	25.04	1135	UMS	Moscow Naval Radio
14156	3xr7b	24.04	0837	.	
14180	a1a	23	0700-0710	RMIM & RMYL	Both called each other and made contact
14198.5	a1a	03	0858	VLQ	called VMO
14171	a1a	19	0645-0650	UMS	UUU UMS 24390 00508
14200	a1a	22	0900-0905	VMO	calling VLQ
14209.5-14218		mni	0820-1404	.	multi modes/channels
14215	a1a	mni	0958-1001	2TF	calling 4AL
14216	a1a	mni	0620-0635	M3S	calling XC4
			0635-0645	CR5	calling SW4
14231.5	mni	mni	0610-0900	.	T/C & Fax
14265	a1a	01	0700-0715	CZK	calling LDK
14266	a1a	mni	0545-0635	CZK	calling LDK
14274	a1a	mni	0955-0100	CQ5	calling CQ
14292	a1a	21	0340-0355	Y904	NJBI NJBI De Y904
14317	a1a	28.04	1015-1100	.	5 letter cyphers
Special Note					
14250	a3e	24.04	0040	VIT	Australian Radio
If we can't get rid of this intruder, what hope have we got to remove others from our bands. Are we just a dog chasing its tail?					
21000-21003	mni	23.04	0348	.	multi modes/channels
21007.5	f1b	24.04	0746	.	
21008.5	r7b	27.04	0900	.	
21011.5	r7b	28.04	0439	.	
21032	a1a/ f1b	mni	0200-0622	UMS	Moscow Naval Radio
21113	a1a	mni	0547-0611	CQ5	calling CQ
21120	a1a	29.04	0325-0400	RMYL, RMIM, UAZK, RMWV	calling each other
21283.5	f1b	mni	0533-0838	.	
21283	a1a fsk	mni	0700-0710	XSC	XSC XSC XSC AR

21326	a1a	mni	0500-0510	WG6	calling PBU
21327	a1a	mni	0600-0615	5HL	calling CQ
21311	b9w	27.04	0010	.	
21325.5	a1a	06	0605	.	Asian v/poor CW
21355	f1b	mni	0732-1152	.	
21404	a3e	dly	0601-0617	.	music Russian
21450	a3e	dly	0600	.	music

Note. CQ5 is a Chinese Diplomatic Stn in Peking.
Comments. PON was heard on most bands on most days.
More than 4000 AM CB stations were logged for the month.
One CBer was:
GZ 09 FEK JL Waringin
IVN09
PO Box 13210
Jakarta Timor Sea
Indonesia
This is an address he gave when approached by an Australian amateur. He required a QSL card.
Reports were received from: VKs 2EYI, 3KKH, 3MBU, 3XB, 4BG, 4ADY, 4AKX, 4BHJ, 4BTW, 4BXC, 4VJT, 5GZ, 5TL, 6RO, 6XW, 6NHX, Tom Baines in VK7 and 8HA. Help was also received from VKs 6RO, 6NHX, Tom Baines in VK7, 6XW, 8HA, and from VK4KEL. Reports still need to be better quality and require more HARD CORE EVIDENCE.

HOW'S DX

by Patrick Kelly VK2RZ
PO Box 41
Ourimbah NSW 2258

Walvis Bay

This small outpost of the Republic of South Africa is located on the mid-North coast of Namibia and seems destined for DXCC status. Walvis Bay, with its population of 22,900 was isolated territorially from South Africa when Namibia was granted independence on 1 April this year. Elections are due to be held in Namibia in July, after which it will become self-governing.

Ian ZS1IS who lives in Walvis Bay told me that a lengthy joint submission to the ARRL by himself, KC1AG and F6HIZ is presently under consideration. This group have planned an operation from Ian's QTH, commencing on 27 or 28 August. By this time, it should be known whether Walvis Bay will count or not.

All this interest in Walvis Bay has turned Ian ZS1IS into a celebrity. He doesn't mind being wooed by all and sundry, but does admit to finding the Europeans a bit hard to take. I was lucky enough to bring Ian up on the ANZA net with help from ZS operators. He has continued to show up to give many DX'ers an early chance for a brand new country. QSL to Ian Sutherland, PO Box 2327, Walvis Bay, 9190, Republic of South Africa.

Cameroon

There was unexpected activity from TJ1MW and TJ1BW at the start of July. I know that the QSL route for TJ1BW is N4MUJ, but I'm not sure if it is good for both.

Look for IK1JLL as TJ1LL from 10-30 August. Some frequencies are 14.305, 21.305, 28.305 and 28.550 MHz.

South Yemen

On the most wanted DXCC countries list, this one is in the top five. An operation here by I1RBJ was scheduled to start on 18 or 19 July. The bands to be used were 10, 15 and 20 metres, using a vertical antenna. The callsign was to be 7O0A and the QSL to I1RB.

Angola D2

An operation planned for here later this year by co-operators is now off. Apparently there is concern for their safety, despite the 30,000 Cuban troops who have been in the country for several years supporting the Marxist regime.

Namibia

Three operators are making it very easy to work this one.

ZS3BI, Arnold, PO Box 1533, Swakopmund, Namibia, South West Africa and ZS3GB, Gerd Bruns, PO Box 1165, Tsumeb, 9000, Namibia. (Note, that he no longer has a manager.)

ZS3HL - Horst, via W3HNK.

Tuvalu

Peter T26LP and Ron T28RW (alias ZL1AMO) operated from here in mid-June. Ron was last heard as 3D2RW. All QSL's to ZL1AMO.

Lord Howe Island

Long time resident, Dick VK9LH is back on air and should have all his antennas up by now. QSL via callbook address.

South Sudan

John PA3CXC was active as PA3CXC/ST0 and has advised that he did not have a licence, so this did not count for DXCC. A later operation was planned for early July, but John cancelled this in light of political unrest there. There's been a coup.

A better prospect may be Marinus TZ6MG, who will be working near Juba and expects to be there for twelve months. He does not have a licence at this stage, but hopes to sort this out when he has settled in.

Syria

Manfred OE5GML/YK is still active, and has been on 15 metres around 0200Z. QSL to Manfred Gruberbaur, c/- Austrian UN Battalion, PO Box 5734, Damascus, Syria. YK1AO is usually on 14.250 at 0300Z with JY3ZH. QSL to Omar Shabsigh, Box 245, Damascus, Syria.

United Arab Emirates

Hamdan A61AC is a new operator, and is also with JY3ZH most days. QSL to PO Box 4221, Dubai, United Arab Emirates.

A61AB is also about. QSL via OE6EEG. Contacts for February/March 1988 go to F2CW.

Nepal

It appears that a lot of DX'ers need this one. Krishna 9N1MC has been helping out. Father Moran 9N1MM has been around for many years and Prabin 9N1RN, when active, can be found near 21.200 MHz around 0900Z. There are

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many reports of problems in getting cards directly from Nepal. This is very disconcerting, so maybe SASE via registered mail might help.

QSL Routes for Above

* 9N1MC - Krishna B Khatry, Chief Engineer, Ministry of Communication, Panchayat Plaza, Kathmandu, Nepal
* 9N1MM - N7EB (9N1MM/2 to OE2VLN).
* 9N1RN - Prabin, PO Box 634, Kathmandu, Nepal.

Bahamas

I worked Mike C6ANX, at 0622Z on 21.205 MHz. He does not usually operate as late as this unless he does not have to work the next day. QSL is OK via the bureau or to his callbook address. For C6ADC and C6ANI QSL via callbook.

Comoros

Tom 5H3TW has been operating as D68TW, QSL for both calls to K3ZO. Jean-Louis D68JL has been on most bands. Signals on the short path from Africa and the Indian Ocean on 10 metres continue to be good around 0600Z, even in mid-winter. QSL for D68JL to AK1E.

Macquarie Island

Graeme VK0GC is now half way through his fourth stay and enjoying every minute. He has been very active on all bands usually with good signals. QSL to VK9NS.

For those needing a CW contact, look for Robyn VK0DM. She has not been very easy to find, but you might try listening on 20 metres on Tuesdays around 0900Z when she has a sked with her manager VK2DEJ.

Egypt

Sig SU1EE was on 15 metres almost daily, before he left for Zaire, where he will be signing 9Q5EE. QSL to WA9INK.

Revilla Gigedo Island

As I reported some issues back, there is now an operator here. He is XF4F and is the commander of the Mexican garrison on the island. There is no QSL information at present.

Cocos Island

TI9TEB was active during June. QSL to Ted Evans, PO Box 2612, 1000 San Jose, Costa Rica. The same route is also good for TI1D, TI2D and TI2TEB.

Cano Island (Costa Rica)

I was attracted to this operation by the unusual callsign ØT8C. Contacts are also good for the IOTA Award. QSL is to TIØRC, the Costa Rican radio club.

Mongolia

Most activity in zone 23 comes from the Mongolian capital - Ulan Bator. JT1T is regularly about and is quite easily worked on most bands. Getting confirmation is the main problem with JT contacts. Anyone having difficulty should try sending to JT1KAA who has agreed to help. An SAE and greenstamp is required.

QSL for JT1T is to JT1KAA via the Central Radio Club Station, Box 639, Ulan Bator 13, Mongolia.

UA3PAM should be in Mongolia by now. RAØAD/JT is active now and you can QSL to RA9YD, Box 1, Barnaul, 656057, USSR.

San Marino

There has been a lot of activity from Paul T7T and Tony T77C. Signals on 15 and 20 metres have been very good here on the East coast from 0300Z on. QSLs for T77T are OK direct to his callbook address or via the bureau. T77C QSL to Tony Ceccoli, Via Delle Carrare 67, 47031, Murata, Republic of San Marino (via Italy).

Market Reef

Located off the south coast of Finland in the Baltic Sea, this was a new country for me. OH2AP/OHØM wasn't too hard to work on 15 and 20 metres, even though signals were down. QSL to Jarvenpaan Radioamatoorit, Box 90, SF-04401, Jarvenpaa, Finland.

Rare USSR Oblast

Several members of the Tajik DX Club operated from Oblast 042, high in the Pamir Mountains. They were there from 20-30 June and worked 80-10 metres SSB and CW. Callsigns were RJ7R/UJ8JCQ, RJ4R/UJ8JV and QSL to Alex UJ8JCQ, PO Box 1102, Dushanbe, 734032, Tajik, SSR, USSR.

Ceuta and Melilla

Spanish North Africa is fairly common, but if you are not around at the right time and place, as with all DX, you can miss out. Peter EA9IB, has been on 10 metres around 0200Z, and Charlie EC9JB was easily worked on 21.195 MHz at 0014Z. QSL for both to EA9IB via callbook.

QSL Information

ATØT:	W8XM
GM4WAB/P: (Shetland Islands)	G1SGB
GB4RIE:	Bureau
J88AQ:	W2MIG
JG2MWA/JD1: (Minami Torishima)	Bureau
PJ4CR:	Callbook
T5CT:	N4CT
T3ØAC:	AA6BB
TA3F:	1989 Callbook
TI9FAG:	Callbook
TK5EP:	F6ESH
TR8RLA:	NV7J
TV6ACO:	FF6KFI
TZ6BKY:	EA5CTP
VP2MC:	Callbook
VP2MHD:	Callbook
VP5S:	K1GAO
YS1MAE:	WN5K

A22AP: PO Box 250, Gabarone, Botswana

D44BS: Angelo Mendes, PO Box 101, Praia, Cape Verde Island.

FY4FM: Michel Kherzi, PO Box 6005, Cayenne, 97306, French Guiana.

SV1AHZ/9: PO Box 14245, Athens, 11510, Greece.

VP8BUY: K Morrison, 20 Silverdale Avenue, Coton, Cambridge, CB3 7PP, England.

ZD8MAC: Box 2, Georgetown, Ascencion Island.

ZB2CF: C McEwen, 12 Kings Bastion, Gibral-

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tar.

7X2DS: Box 105, Rouiba City, 35300, Algeria.

8R1AH: A H Van Der Kooi, APT 203, 1020 Parker Street, White Rock, BC Canada, V4B 4R7 (note: Change of Info.)

8P6CC: PO Box W5, Christchurch, Barbados, West Indies.

9V1XI: PO Box 1151, Robinson, Singapore. 5B4WW: 5B4TI, 5N3BHF: OE6LA, 8SØITU: SKØCC, 9M2DW: Callbook.

Other News

QSL's for UJ/RJ can now be sent to the UJ/RJ QSL Service, PO Box 1102, Dushanbe, 734032, Tajik, SSR, USSR. If you would like any information on the Tajik DX Club, you can send SASE to the same address.

The many excellent DX Awards offered by CQ Magazine in the US are much sought after by DX'ers worldwide. VK5NVW is now authorised to scrutinize QSL's for these awards submitted by VK's. For further details about these awards send SASE to Bill Vogel, 16 Wandilla Street, Largs North, SA 5016.

If you worked ZA1AA (not very imaginative!) recently, hang on to your greenstamps. SM7DMN reckons he made 700 contacts from Albania on 5 June according to an unconfirmed report.

Bing VK2BCH appears to have recovered from the illness that laid him low in the South Cook's. At this time he is happily operating from Rotuma as 3D2XV, and is very active between meals.

There is some possibility of an expedition to Malpelo Island HKØ next year. Some Colombian amateurs are giving this idea a lot of thought. It used to be very difficult getting all the gear needed ashore and up to a safe spot to operate, which was the main reason for not going there on a regular basis. Now the Colombian Navy has a floating dock, and the army has a base there. HKØHEU Nel, hopes to be there with a group in November 1990.

Some good information has come to me directly from the USSR. It is from the Prometheus Amateur Association Inc (PAA) and was in hand written form so I will hold the very detailed QSL information over till next month. Though well written, it does need some decyphering.

The PAA was formed by the amalgamation of five clubs, as a result of lessons learned after the Armenian earthquake in December 1988. This broad base of amateur resources has been utilised in forming emergency networks that can be activated in times of future need.

Many awards and services are offered by the PAA. Anyone interested in further information on these, or who would like to apply for membership, can send a SASE (IRCs or greenstamp) to be Prometheus Amateur Association Inc, PO Box 1, Enakiewo 29, 543820, USSR. Membership is by donation, they need IRCs and greenstamps, but anything is OK including equipment. A lot of USSR operators are using foreign made gear TS830S', TS940's and an FT707 are some I've come across.

Well that's it, I must go - many stations calling. Thanks to VK2HD, VK2PS, VK4NNX, VK5NVW, QRZ DX and W6GO/K6HHD List. Good DX! ar

CLUB CORNER

Report From VK3BML - Ballarat

Clarry Kitzelmann
VK3DMK
Publicity Officer
BARG

Ballarat Amateur Radio Group held their annual meeting on 30 June 1989. Along with a good attendance of members, there were five visitors - some from many K's away.

Gordon Cornell (VK3PUW) was elected President, Ian McDonald (VK3AXH) was elected Vice-President, and Jim Wright (VK3CFB) was once again elected Secretary. Finances remain in the custody of Harry Hekkema (VK3KGL).

The next Hamvention date was set at 29 October 1989, and precise details will be advised later.

Packet radio is having a strong resurgence, in addition to numerous new chums, in the area. The Club was fortunate having a TNC being provided by the AAPRA organisation. This TNC is currently in a test situation at the QTH of Murray Felstead (VK3AAI), who has the enviable location of just 70 metres below the peak of Mt Buninyong.

This link now serves packeteers from the Mount Gambier region, via Mt William digipeater (VK3RPG), through Ballarat (VK3RPC) to Melbourne. ar

VK3CRC - Colac Amateur Radio Club

D C Stalker
Secretary
PO Box 92 Colac 3250

Herewith names and addresses of Office Bearers and Committee of the above Club elected at their Annual Meeting held on June 7 last.

President: Mr T Evans, RSD Harris Road, Elliminyt 3249. Vice President: Mr G Alsop, 8 Douglas Street, Colac 3250. Secretary/Treasurer: Mr D C Stalker, PO Box 92, Colac 3250. Committee: Mr R Cooper, PO Box 231, Colac 3250. Mr C Maxwell, RMB 5070, Colac 3250. Mr D Paton, RMB 5044, Colac 3250. Mrs M Laquinto, Colanda PO Box 285, Colac 3250. Mr G Runciman, PO Box 76, Colac 3250. Mr B Cutler, RMB 8160, Colac 3250. Mr R Spalding, RMB 8575, Colac 3250. Mr K Reid, RMB 5855, Timboon 3268. ar

Australian Amateur Packet Radio Association

John Jeffreys VK2CPJ
Hon. Sec. AAPRA
59 Westbrook Avenue
Wahroonga 2076

AAPRA was formed in April 1985 with the object of promoting the use of Packet in Australia using the AX25 protocol. To this end it has supplied appropriate equipment and information.

The surplus from sales and subscriptions has been ploughed back into developing a Packet network, by assisting Radio Clubs establish Packet facilities for a token cost. The Association publishes a quarterly newsletter "Digipeat" which is circulated to members, and can supply an informative booklet, "Introduction to Packet Radio". AAPRA is an entirely voluntary, non-profit group and its operation depends on the hard work of relatively few enthusiasts, though they are supported by over 400 members from various parts of the globe, not just Australia.

The equipment currently available from AAPRA is described briefly below. A Price List appears separately in an Association advertisement on page 60.

Commercial TNCs

(Terminal Node Controllers)

These are manufactured by PAC-COMM in the USA, and are of two types - the TINY-2 TNC which operates on VHF only, and the TNC 220 which has dual port modem operating on VHF and HF. The TNC 220 has a tuning indicator for HF use. Both these TNCs (Release 1.1.6) now contain PMS (Personal Message Service), and will interface between any radio and a computer that has a terminal program, using either TTL or RS232. When used with IBM or compatibles, bionary files can be transferred using the YAPP software available in the public domain. The TINY-2 may incorporate the KISS system.

C=PAK

This package which includes hardware and software, was developed by AAPRA to provide a low cost method of operating Packet with the Commodore family of computers. No RS232 port is required.

The software (available on disc or EPROM) causes the Commodore to emulate a TNC in conjunction with a modem. The new modem has dual ports and crystal control, with a 7910 chip. There is no longer need to tune the tones, and stability is improved. It is powered by the computer.

BEEPAK

A recent development has enabled AAPRA to supply hardware and software for disc-based Microbee computers, including the CIAB. The external modem itself is similar to the C=PAK modem, but may require additional components to be added to the Microbee coreboard (SCC Serial Chip and Line Driver and Receiver) to interface with the BEEPAK modem. Provision has been made in disc-based Microbees for mounting these components, which are available from AAPRA, and the modification is comparatively simple.

It is also possible to use Packet with older ROM-based Microbees. However, in this case, the serial interface must be provided externally, and the software contained in an EPROM instead of on a disc. AAPRA considered the supply of a complete kit for these computers, but because of the extra cost of the PCB, EPROM, etc there is insufficient cost advantage as against the current price of a TINY-2 TNC.

For dedicated home-brewers, AAPRA can supply the circuit diagrams, the software EPROM and the IC's to permit construction of a suitable Packet modem for ROM-based Microbees.

Both the AAPRA modems have dual port facilities and some features not available in the TINY- 2 TNC, but lack PMS and KISS.

EPROM Updates

Packet operators who currently own a PACCOMM TINY-2, or TNC 2209 with 32K RAM, can either obtain a new EPROM which will contain the latest (1.1.6) version of the software including PMS, or have their old EPROM reprogrammed. AAPRA also has available suitable RAM chips to upgrade TNCs to 32K.

It is gratifying to see how rapidly the Packet network has developed in the short time since the mode took on. Without the assistance of AAPRA, this would have been haphazard and many country areas would have been neglected. The plans for relieving the strain on existing channels by running UHF and HF backbones have been frustrated by problems regarding DOTC's interpretations of regulations respecting Packet, and the consequent need to develop the ROSE networking software. There has been substantial work done by various country centres, and a complete and efficient Packet network all along the East Coast is not far off. The problems of heavy traffic on some channels, due to the need for Packet BBSs to forward data, will be eliminated when the system envisaged is put into place. The use of six metres and UHF are very appropriate directions in which to go. APLINK, the linking of Packet and AMTOR for better HF traffic, has already improved things in that area.

Packet is a mode with a great future, and AAPRA gets a lot of pleasure out of seeing it grow up without too many puberty blues.

CONTESTS

All Asian and HF Contest Results Rules for LZ DX, Scandinavian, 30th All Asian and SEANET Contests

Frank Beech VK7BC
Federal Contests Manager
37 Nobelius Drive
Legana 7277

Contests Calendar

August:

12-13 WIA Remembrance Day Contest (Rules July AR)
12-13 European DX contest CW section (Rules July AR)
19-20 SEANET World wide DX Contest, SSB section (Rules this issue)
26-27 30th All Asian DX Contest 1989 CW (Rules this issue)

September:

3 LZ Bulgarian DX Contest CW only (Rules this issue)
16-17 Scandinavian Activity Contest CW section (Rules this issue)
23-24 Scandinavian Activity Contest SSB section (Rules this issue)

October:

8 RSGB 21/28 MHz SSB Contest
7-8 VK/ZL Oceania DX Contest SSB section (Rules September AR)
9 RSGB 28 MHz Cumulative Contest
14-15 VK/ZL Oceania DX Contest CW section (Rules September AR)
15 RSGB 21MHz CW Contest

Results of the 29th (1988) All Asian DX Contest CW section - VK's :

VK4TT: 11194 points - certificate winner
VK4SF: 11180 points
VK2AYK: 7080 points - certificate winner
AX4XA: 29704 points - certificate winner
VK2CWS: 2414 points
AX8XX: 237360 points - certificate winner
VK2APK: 228284 multi op.
VK5AGXL: 78456
VK3DNC: 11520
VK2DID: 2576
VK9L: 1496 - certificate winner

Results of the Phone section - VK's :

VK2XT: 113102 points - certificate winner
VK2AYK: 40158 points
VK6NGG: 30510 points
VK2APK:45090 points - certificate winner - multi op.

Number of logs worldwide in the CW Section :

Africa:	9
Europe:	550
Oceania:	27
Nth America:	96
Sth America:	15
Asia:	441
Total:	1138

Number of logs in SSB Section :

Africa:	9
Europe:	278
Oceania:	30
Nth America:	49
Sth America:	16
Asia:	340
Total:	722

In the CW Section: 439 operated multi band, and 83 were multi operator stations.
In the SSB Section: 217 operated multi band, and 78 were multi operator stations.
HF Contest Championship - 1988

1988 HF Contest Championship

I am pleased to announce the contest championship ladder, and with a score of 30 from a possible 40, VK3AJU will receive a replica trophy duly inscribed.

Ian, VK5QX was runner up, with 29 points.

VK4NEF received 19 points.

VK3YH followed with 18, and was the last station to qualify for the Phone list.

In the CW Section, only VK3CQ, with wins in the John Moyle and Remembrance Day Contests, was eligible and gained 20 points.

I think that more publicity for this championship is called for, and to keep the requirements before you, I will print the rules for this championship at least twice a year in future.

Callsign	JMFD	RD	NOV	VK/ZL	Total
VK3AJU	10	10	10	0	30
VK5QX	10	10	9	0	29
VK4NEF	0	0	10	9	19
VK3YH	0	0	9	9	18
CW Section					
VK3CQ	10	10	0	0	20

Rules for the LZ DX Contest 1989

The Bulgarian Federation of Radio Amateurs has the honour to invite amateurs all over the world to participate in the "LZ DX Context".

1 **Date & Period:**
3rd September 1989, From: 0000 until 2400 UTC.

2 **Bands & Mode:**
80 40 20 15 10m according to region 1 band plan. CW only.

3 **Categories:**
(a) "A": Single op, multi band (SOMB)
(b) "B": Single op, single band (SOSB)
(c) "C": Multi op, multi band, single TX
(d) "D": SWL

4 Exchange:
RST plus ITU zone for transmitting station.
5 Points:
(a) 6 points - each confirmed QSO with LZ station
(b) 1 point - QSO with station on same continent
(c) 3 points - QSO with all other stations
6 SWL Points:
(a) 3 points - for two callsigns and two numbers
(b) 1 point - for two callsigns and one number
7 Multiplier:
The sum of number of ITU zones on each band.
8 Final Score:
The sum of QSO points multiplied by the final multiplier.
9 Logs:
In standard form. Separate log for each band is required. Summary sheet showing zones worked on each band and declaration are required.
10 Deadline:
30 Days after contest. Postal seal being decisive.
11 Awards:
(a) Category "B": First three scorers in the world on each band -Medals
(b) Category "A" & C": First three in the top - Cups and Medals. First three in the continent - Medals
(c) Category "D": First three in the world - Medals
(d) Logs may be accompanied by applications for the BFRA awards. "NRB", "W-100 LZ", "5 Band LZ". "W-28 Z" ITU, Black Sea and Sofia Awards.
12 To:
Bulgarian Federation of Radio Amateurs, Box 830, Sofia, Bulgaria.

The 30th All Asian DX Contest - 1989

Supported by the Ministry of Posts and Telecommunications of Japan

The purpose of this contest is to enhance the activity of radio amateurs in Asia and to establish as many contacts as possible during the contest periods between Asian and non-Asian stations.

1 Contest Period:
(a) Phone: 48 hours from 0000 UTC, the third Saturday of June to 2400 UTC next day (1989 : June 17-18)
(b) CW: 48 hours from 0000 UTC, the fourth Saturday of August to 2400 UTC next day (1989 : August 26-27)
2 Bands:
Amateurs bands under 30 MHz.
3 Entry Classifications:
(a) Single operator, 1.9 MHz band (CW only)
(b) Single operator, 3.5 MHz band (including 3.8 MHz band and so forth)
(c) Single operator, 7 MHz band
(d) Single operator, 14 MHz band
(e) Single operator, 21 MHz band
(f) Single operator, 28 MHz band
(g) Single operator, Multi band
(h) Multi operator, Multi band
4 Power, Type of Emission and Frequencies:
With the limits of own station license.
5 Contest Call:
(a) For Asian stations:
(1) Phone: "CQ contest"
(2) CW: "CQ test"
(b) For non-Asian stations:
(1) Phone: "CQ Asia"
(2) CW" "CQ AA"
6 Exchange:
(a) For OM stations: RS(T) report, plus two figures denoting operator's age.
(b) For YL stations: RS(T) report, plus two figures "00 (zero zero)"
7 Restrictions on the Contest:
(a) No contact on cross band
(b) For participants of single operator's entry: Transmitting two signals or more at the same time, including cases of different bands, is not permitted.
(c) For participants of multi operator's entry: Transmitting two signals or more at the same time within the same band, except in case of different bands, is not permitted.
8 Point and Multiplier:
(a) Contacts among Asian stations and among non-Asian stations will neither count as a point, nor a multiplier
(b) For Asian stations:
(1) Point: Perfect contact with non-Asian stations will be scored as follows:-
1.9 MHz band: 3 points
3.5 MHz band: 2 points
Other bands: 1 point
(2) Multiplier: The number of different countries in the world worked on each band. According to the DXCC countries list.
(c) For non-Asian stations:
(1) Point: Perfect contact with Asian stations (excluding US auxiliary military radio stations in the Far East, Japan) will be counted as follows :-
1.9 MHz band: 3 points
3.5 MHz band: 2 points
Other bands: 1 point
(2) Multiplier: The number of different Asian Prefixes worked on each band. According to the WPX Contest rules. Example: JS1ABC/7 will count for prefix JS7.
(d) JD1 stations:
(1) JD1 stations on Ogasawara (Bonin and Volcano) Islands belong to Asia.
(2) JD1 stations on Minamitori Shima (Marcus) Island belong to Oceania.
9 Scoring:
(The sum of the contact points on each band) x (The sum of the multipliers on each band)
10 Instructions on the Summary and Log Sheet:
(a) Summary Sheet: Write in your declaration and signature to give evidence of following the rules of the contest, together with your DXCC country, callsign, entry class, multiplier by band, point by band, and total score.
(b) Log Sheet:
(1) Use a separate sheet for each band
(2) Keep all times in UTC
(3) Fill in the blanks of "multiplier" by countries or prefixes, only the first time on each band.
11 Awards:
(a) For both phone and CW, certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country and also those from each call area in the United States.
(1) The number of participants under 10 :-
Award only to the highest scorer
(2) From 11 - 20 :-
Award up to the runner-up
(3) From 21 to 30 :-
Award up to the top third
(4) From 31 or more :-
Award up to the top fifth
(b) The highest scorer in each Continent of the single operator multi band entry will receive a medal from JARL and certificate from the Minister of Posts and Telecommunications of Japan.
(c) The highest scorer of the multi operator multi band entry in each Continent will receive a medal from JARL.
12 Reporting:
(a) Submit a summary sheet and logs of only one classification.
(b) The log and summary should be postmarked by the following dates addressed to JARL, All Asia DX Contest, PO Box 377, Tokyo Central, Japan. Indicate Phone or CW on the envelope.
(1) Phone: July 30, 1989
(2) CW: September 30, 1989
13 Disqualification:
(a) Violation of the contest rules.
(b) False statement in the report.
(c) Taking points from duplicate contact on the same band in excess of 2% by the total.
14 Announcement of the Result:
(a) Phone: About February 1990
(b) CW: About April 1990
15 Countries List of Asia:

A4	UJ
A5	UL
A6	UM
A7	VS6
A9	VU
AP	VU (Andaman & Nicobar Is.)
BV	VU (Laccadive Is.)
BY	XU
EP	XW
HL	XX9
HS	XZ
HZ	YA
JA	YI
JD1 (Ogasawara Is.)	YK
JT	ZC4
JY	IS (Spratly Is.)
OD	3W,XV
S2	4S
TA2-8	4W
UA9,0	4X, 4Z
UD	5B
UF	7O
UG	8Q
UH	9K
UI	

9M2	9V
9N	J2/A (Abu Ail, Jabal at Tair)

* You may have contest results by enclosing one IRC and SAE with your log. * Dateline for submitting logs has been changed. Take note that it is not the arrival date, but that of postmark.

Condensed Rules for the Scandinavian Activity Contest

Non-Scandinavian Stations
For Details see the Complete Rules

1 **Time:**
(a) CW: 3rd full weekend in September
(b) Phone: 4th full weekend in September
(c) Start: 1500 UTC, Saturday, End: 1800 UTC Sunday

2 **Bands:**
3.5 - 7 - 14 - 21 - 28 MHz
Band/frequency limits according to the IARU plans.

3 **Classes:**
(a) Single Operator, single Tx
(b) Single Operator, single Tx/QRP
(c) Multi Operator, single Tx
(d) SWL
(No single band classes - multi band classes only)

4 **QSO's:**
Only non-Scandinavian stations with Scandi navian stations are valid.

5 **Message Exchange:**
RS(T) + Serial Number (001. . .)
The same station may be worked once on each band.
Only CW/CW and Phone/Phone QSO's are valid.

6 **QSO Points:**
(a) European Stations:-
(1) A valid QSO counts one point
(b) Non-European Stations:-
(1) A valid QSO on 14-21-28 MHz counts one point
(2) A valid QSO on 7-3.5 MHz counts three points

7 **Multipliers:**
(a) Scandinavian DXCC countries are: Norway (LA/LB/LG/LJ); Svalbard & Bear Is (JW); Jan Mayen (JX); Finland (OF/OG/OH/OI); Aland Is (OH0); Market Reef (OH0/OJ); Greenland (OX); Faroe Is (OY); Denmark (OZ); Sweden (SJ/SK/SL/SM); Iceland (TF).
(b) Each "call-area number" in each Scandinavian DXCC country gives one multiplier on each band (example: OZ1, OZ4, SM3, OH0 etc.)
(c) Visitors: LA/G3xxx counts as zero area, i.e. LA0.

8 **Logs:**
(a) Use separate logs for CW and Phone. On the top of each page: Station Call, Name, CW or Phone, Class, Page no.
(b) Make columns for: Date+UTC, Station Worked, Messages Sent and Received, Band, Multiplier, QSO points.

9 **Multiplier Sheet and Duplicate Sheet:**
(a) Is required for each band with more than 200 QSOs.
(b) Duplicates must also be shown (with zero points) in the log.

10 **The Summary Sheet:**
(a) Must contain:-
(1) Call of station (and operators if multi), Name and Address of Operator (or club), CW or Phone, Class.
(2) For each band: Number of valid QSOs, Number of duplicates, Number of multipliers, Number of QSO points.
(3) Claimed total score: (= Total sum of QSO points x Total sum of multipliers)
(4) Declaration and signature.

11 **Last Date for Mailing:**
October 31st, Address: 1989 NRRL; 1990 EDR; 1991 SRAL; 1992 SSA, etc.

12 **Logs To:**
Trondheim DX Club, LA7Q
Box 5357
N-7002 Trondheim
Norway.

SEANET World Wide DX Contest - 1989

1 **Contest Dates and Times:**
(a) CW Contest: 0000 UTC Saturday 15 July 1989 to 2400 UTC Sunday 16 July 1989.
(b) Fone Contest: 0000 UTC Saturday 19 August 1989 to 2400 UTC Sunday 20 August 1989.

2 **Bands:**
(a) 160 thru 10 Metres

3 **Entry Classification:**
(a) Single band, single operator
(b) Multi band, single operator
(c) Multi band, multi operator

4 **Power Input:**
(a) As stipulated in the regulations governing the licence of the operator.

5 **Contest Call:**
(a) "CQ SEA" - for CW contest
(b) "CQ SEATEST" - for Fone contest

6 **Reporting:**
(a) RS/RST report plus serial numbers starting with 001 and increase by one for each successive contact. See also Rule 3 (d)

7 **Scoring Rules:**
(a) For stations outside SEANET area:-
(1) Contact with stations within SE ANET area of the following prefixes :- DU, HS, YB, 9M2, 9M6, 9M8, 9V1, V85: 20 points on 160 metres
10 points on 80 and 40 metres
4 points on 20, 15 and 10 metres
(2) Contacts with other stations within SEANET area not listed above in 1(a):
10 points on 160 metres
5 points on 80 and 40 metres
2 points on 20, 15 and 10 metres
(3) Contacts between stations outside SEANET area will not be counted.
(4) Multipliers will be 3 points for each country worked, i.e. for countries between SEANET areas only.
(b) For stations in the SEANET areas:-
(1) Contacts with stations outside SEANET areas:
10 points on 160 metres
5 points on 80 and 40 metres
2 points on 20, 15 and 10 metres
(2) Contacts between stations within SEANET areas:
6 points on 160 metres
3 points on 80 and 40 metres
1 point on 20, 15 and 10 metres
(3) Contacts between stations in own country will not be counted.
(4) Multipliers:
Contacts with countries within SEANET area - count 2 points for each country worked.
Contacts with countries outside SE ANET area - count 3 points for each country worked.
(c) The final score will be the sum of the points multiplied by the sum of the country multipliers.

8 **List of SEANET Area Prefixes;**

A4	V85
A5	VS6
A6	VS9K
A9	VU2
AP	XU
BV	XV5
CR9	XW8
C21	YB
DU	YJ8
EP	ZK
HL	ZL
HS	3B6/7
H44	3B8
JA/JE/JF/JG/JH/JI/JR etc	3D2
JD1	4S7
JY	FX
KA	5W1
KC6	5Z4
KG6/KH2	8Q7
KH6	9K2
KX6	9M2
P29	9M6/8
S79	9N1
VK	9V1
VQ9	

9 **Restrictions**
(a) Contacts on cross-modes or cross-bands or mixed CW/Fone logs will be disqualified.
(b) Operators are not allowed to transmit two or more signals at the same time.
(c) Only one contact per band with the same station will be counted.
(d) Contest numbers should begin with 001 on each different band.
(e) All entries in violation of the contest rules, incorrect statements int he submitted reports, taking points from duplicate contact and practices against the brotherhood of amateur radio will be disqualified.
(f) The decision of the SEANET Contest Committee shall be final.

10 **Entries, Logs and Summary Sheets:**
(a) All entries must be in the form of logs and summary sheets.
(b) All Times must be in UTC.
(c) Entries must be received by The Contest Manager, Yathe - 9V1JY and addressed to SARTS, Robinson Road, PO Box 272B, Singapore 9047, not later than 31 October 1989.

11 **Results:**
(a) Results will be announced at the SE-ANET Convention.
(b) If you require the results to be sent to you, please enclose IRC's together with your entry. 73's. ar

DIVISIONAL NOTES

VK3 Notes

Council Elections

The 1989-90 Divisional Council met on 6 July 1989 to conduct the business and policy matters of the WIA Victorian Division. The first duty of any new Council is to elect office bearers for the coming year. It was decided that those in office in the outgoing Council would be re-elected to their positions.

Jim Linton VK3PC was elected President for his second successive year. He had also held that office for a previous three year term from 1983-86 before taking a two year break. Jim also retains the office of Council Chairman, and is Public Relations Officer. Barry Wilton VK3XV remains as Divisional Secretary. The office of Treasurer is subject to election each December, which marks the end of the financial year. Rob Hailey VK3XLZ is continuing to perform this increasingly demanding task. The other councillors for 1989-90 are Peter Mill VK3ZPP (Federal Councillor), Steve Harrington VK3BYI, Bill Trigg VK3PTW (Broadcast Officer), and John White VK3KJW, (VK3AOM Liaison Officer and Minute Secretary).

New Inwards QSL Bureau

By now the 900 people who were registered with the old bureau should have received letters inviting them to register with the new bureau. Anyone who had deposits with the old bureau in excess of $1.00 were sent refund cheques. To use the bureau and receive inwards QSL cards you must first individually register. Members of the WIA Victorian Division can register free of charge. Non-members will have to pay for the service. An information sheet explaining the new bureau is available free by writing to the VK3 QSL Manager, PO Box 88, Bentleigh East 3165.

Membership Subscription Update

The Victorian Division Council is currently examining the implications of the 1990 financial federal budget and the decision to increase the federal fee component to $47 per member. The WIA Federal Executive had reviewed its 1990 financial budget and decided it needed $47 per head for every member of the Divisions.

The Victorian Division representatives at the con-jointly held Federal Executive and Federal Council meeting, voted against the increased Federal funding. The Victorian Division considered that justification for this rise has not been adequately supported to this date. Added to this $47 Federal component of subscriptions will be a $2 levy for international representation - this is a $16 total increase on the Federal component. Whilst the Division agrees that the rising costs are inevitable, an overall fee of $66 would meet the Federal requirement, but would allow for no increase in the Division component. Does the Federal Council feel that the Victorian Division should absorb rising costs as it did last year when the Federal component rose by $3 and the Division absorbed $2, by depleting our reserve obtained from the sale of the 412 Brunswick Street, Fitzroy property? The Federal Council at an extraordinary special Federal Convention, voted to accept the Federal Executive recommendations.

Before any fee rise is implemented for members of the WIA Victorian Division, a special general meeting will be held and members will be required to register their vote. In the meantime, your elected Divisional Council is considering all the implications of the fee rise, and will make an appropriate recommendation.

Jim Linton VK3PC

VK4 Notes

The North Queensland 1989 Convention will be held at Townsville on 22, 23 and 24 September. For further information, please contact Rob VK4RB on (079) 752118.

The Dalby and District Club hope to have their new 146.675 repeater working from the Bunya Mountains within the next month or so. This repeater will be utilised by many, as it will cover a huge area in South Queensland. Don't forget to let the Federal Office know if there are any changes (QTHR) for the 1990 callbook.

Bill Horner
VK4MWZ

"5/8 Wave"

Update on the Deceased Estates Committee

I am pleased to be able to announce some more volunteers for the Deceased Estates Committee. George Burgess VK5CGB has offered to help Steve VK5AIM and Ron VK5AAC in the Northern suburbs, and Peter Maddern VK5PRM and John McKellar VK5BJM have offered to help Don VK5KXX in the central area. We have also contacted the South Coast ARC asking if anyone would be willing to take on the Southern suburbs.

Clubs Confer Honorary Life Memberships

Adelaide Hills AR Society has bestowed its first Honorary Life Membership on Gordon Welsh VK5KGS, who is retiring to Yorke Peninsula to live. Gordon has been the Club Secretary since its inception up until this year, and I'm sure it is not exaggerating too much to say that he has been the "backbone" of the club. Also honored by his club is Trevor Niven VK5NC, who has been made the second Honorary Life Member of the South East Radio Group. The first was Eric Jamieson VK5LP, last year. I believe that SERG is still recovering from its recent, very successful 25th Convention. Also, we hope recovering by now, are Bevin and Barbara Boden (VK5TV and his XYL) who were foxhunting when their car got "entangled" with another car. You'd think after 25 years, the Mt Gambier natives would know how to stay off the roads at "foxhunting time"!

New Clubs

We are pleased to welcome into the VK5 Division, the Riverland ARC which centres around Renmark and the surrounding towns. Also, I believe the Moomba ARC VK5GAS is about to become affiliated.

Diary Dates

Tuesday 22 August: General Meeting (speaker not known), 7.45 pm

Tuesday 29 August:Buy and Sell Night, 7.30 pm (no ESC, QSL, etc.)

(Peter Maddern VK5PRM would like suggestions for speakers - Please.)

Jennifer Warrington
VK5ANW

AWARDS

CARIE and FAMPARC Awards

Ken Gott VK3AJU
Federal Awards Manager
38a Lansdown Road
St Kilda 3183

VK Awards Survey

In April I wrote to more than 70 managers of awards issued by VK divisions, zones, clubs and other groups seeking up-to-date information on their awards. The last listing of VK awards was in the 1985-86 Call Book and I'm hoping that a new listing can be included either in the 1990 edition or in the information supplement to AR next January.

The cut-off date for my survey was June 30 by which time I had received more than 40 responses. Most were from managers who reported that their awards were still being issued. A few wrote to say that the award in question was no longer operative for one reason or another. A handful of my questionnaires came back, "Not Known at this Address".

That still leaves a few of the questionnaires unaccounted for. I can only assume that in these cases my query was properly addressed, but never answered.

Next month I'll report further on what the survey revealed and name the awards I propose to include in the next WIA listing.

CARIE Award

CARIE is the acronym for Cercle des Amateurs Radio des Institutions Europeenes (translation: European Institutions Radio Amateurs Club).

CARIE is offering a special award for 1989 only to mark its own tenth anniversary, and the tenth anniversary of direct elections to the European Parliament.

The qualification for the award is a QSO with a station in each member state of the European Community (Belgium, Denmark, FR Germany, France, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and the UK - a total of 12). A QSO with the CARIE station operating under the callsign LX10CE during 1989 can be substituted for a missing country.

QSO's must be confirmed, but cards need not be submitted. A list of cards, certified by two amateurs or by a club official will suffice. The list should follow this order: callsign, date, UTC, MHz, signal report and mode. Any bands and modes may be used.

The fee for the award is 10 IRCs, 200 Belgium francs, or five European Currency Units.

Applications should be accompanied by a gummed sticker bearing the applicant's address. Send to CARIE, LX10CE Award, PO Box 1776, L-1017 Luxembourg.

Hike in WIA Award Fees (but not for WIA members)

I am recommending an increase in the cost of WIA awards for overseas amateurs, while maintaining the principle that they remain free to WIA members. The awards in question are the WAVKCA, HAVKCA, DXCC, WAVKCA (VHF) etc, plus the new Antarctic Award.

For many years the price of our awards to overseas amateurs and SWL's has been unchanged at US$2.00, equivalent to about A$2.50. Award certificates need to be sent in sturdy mailing tubes. These cost at least 75 cents each, and when the stamps are added, there is not much change from US$2.00.

Before drafting my recommendation to the WIA Executive/Council I looked at what other amateur radio societies are charging for their awards. I found that with the exception of some of the ZL awards, our US$2.00 price was about the lowest in the world.

I was also intrigued by the value placed on the IRC by various amateur bodies and others operating awards. The RSGB's Commonwealth Century Club Award costs US$4.00 or 12 IRC's (which values an IRC at 33 cents) while the Worked All India Award costs US$8.00 or 16 IRC's (making an IRC worth 50 cents.)

CQ magazine asks US$10.00 for its awards, or 40 IRC's (making them worth 25 cents), while 73 monthly prices its certificates at US$5.00 or 12 IRC's (an equivalence of about 42 cents.)

However, the choicest anomaly was from the amateur body in Italy. It offers its Marco Polo Award for US$5.00 or 15 IRC's and its Islands Award for US$5.00 or 20 IRC's.

As mentioned in July AR, I'm offering IRC's to WIA members only at 80 cents each.

FAMPARC Awards

Among its members and friends the Frankston and Mornington Peninsula Amateur Radio Club is (mercifully!) usually referred to as FAMPARC.

FAMPARC offers two awards (pictured below.) Both the Coastal Towns 100 Award and the Port Phillip Bay Award are available to all amateurs worldwide, and to SWLs on a heard basis. Contacts after January 1, 1980 are valid and so are all modes and all bands. Cards need not be submitted - a log extract certified by two amateurs, one club official, or a notary public will suffice.

For the first award, the 100 QSO's with amateurs in coastal towns/cities must include stations located in five towns/cities in each of VK2, VK3, VK4, VK5 and VK7, and at least three QSO's with stations in VK6 coastal towns, plus one in VK8. Additionally there must be at least one contact with a FAMPARC member.

The rules above relating to verification, modes, etc also apply to the Port Phillip Bay Award. The qualification for VK stations is 50 contacts with stations anywhere around the Bay shore, and for overseas stations 20. Again, the 50 (or 20) must include one FAMPARC member.

Each award costs A$4.00 or equivalent and log extracts must contain: date, UTC, callsign, signal reports, band, mode, name and QTH of operator.

FAMPARC members can be found on the club net each Wednesday at 1000 UTC on 3.570 MHz +/ QRM. Applications and enquiries to: Awards Manager, PO Box 38, Frankston, 3199.

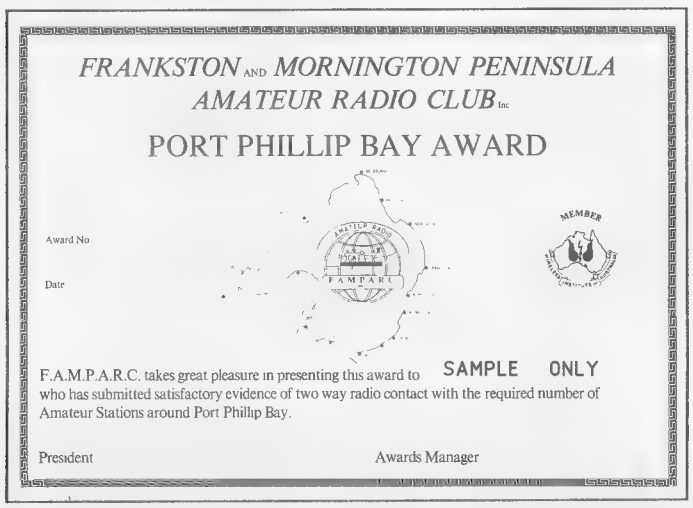
DXCC Updates

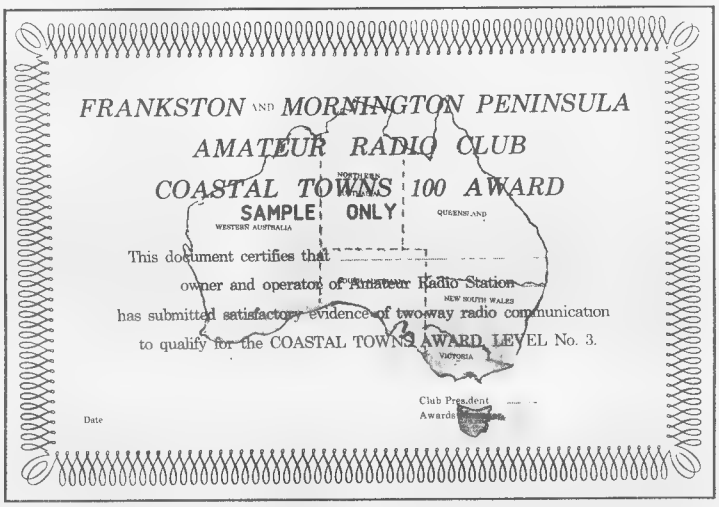
CW	Phone	Open
VK1ZL	284	
VK3OT	305/309	308/312
VK3YJ	305/306	
VK3AJU	150	
VK4DA	154	155
VK4KRP	153	
VK4FQW	136	
VK6LK	316/332	
VK6NE	309/319	
VK2EG (RTTY)		150

ILT

Don't Forget

Amendments for the 1990 Call Book must be at the Executive Office by August 21 1989.





3 STORE BUYING POWER

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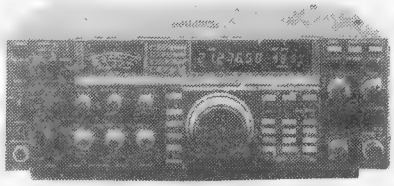

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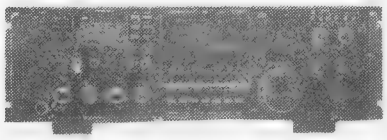

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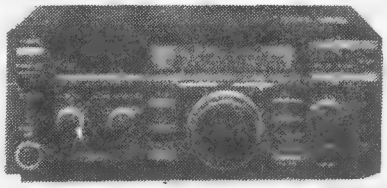

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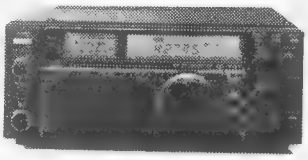
ICOM **IC-735**



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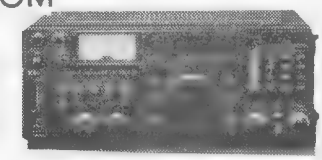

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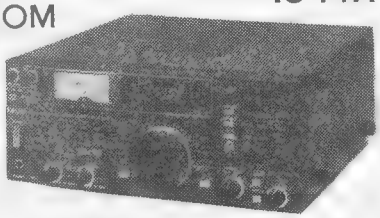

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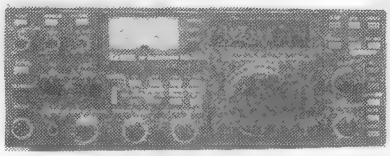

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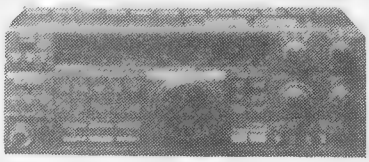

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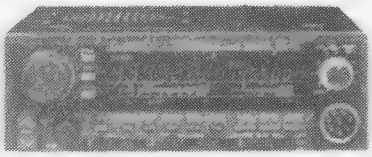

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EMTRONICS

SILENT KEYS

We regret to announce the recent passing of :-

Dr D A Grieve	VK2BLG
Mr J A (Bert) Cusick	VK3MQ
Mr Murray C Foot	VK5BE
Mr Lloyd Williams	VK4ALW
Mr Graham W Haughton	VK4LW
Mr William A McDevitt	VK4XM

Lloyd Williams VK4ALW

It is with great sadness that we advise the passing of Lloyd Owen Williams VK4ALW (ex (VK4OW) on April 19 last, at the age of 82 years, after a battle with cancer.

Lloyd was a lifelong experimenter. He worked as a radio engineer at station 4MK Mackay (which was founded by his Father) from the early 1930's until 1996. Lloyd then operated a TV service business until he retired.

Lloyd held both Broadcast Operators and Amateur Operators Certificates of Proficiency, which he obtained in the late 1930's.

Lloyd was a member of the WIA, RAOTC, AMSAT (US), AMSAT (Aust), Townsville Amateur Radio Club, and a Life Member of the Mackay Amateur Radio Club.

His enquiring mind, willingness to help others, and gentlemanly approach to all things, left all who met him the better for having known him.

To Lloyd's widow, Dorothy, sons Norris and Bruce, daughters Desley and Valerie, our deepest sympathy.

Mackay Amateur Radio Club
per Warwick Lake
VK4AP

Sydney Westerman VK2ESW

Syd Westerman passed away in the Nepean District Hospital on 26 April 1989 aged 80. He was born in England and educated in NSW. Leaving school at the age of thirteen he joined the NSW Railways at seventeen as a Junior Porter.

He saw 43 years service with the NSWGR, having worked in many places including Birriwa, Dunedoo, Casiono, Coopernook, Merrygoen, Binaway, Queanbeyan, Kingswood and Mount Druitt.

He passed the NAOCP when he was 74 years of age. He lived through the period of the greatest technological change ever known.

In addition to Radio, his other hobby was working with wood, making furniture and toys; his wife Muriel made sheets and pillows etc for toy cot.

Syd had not enjoyed good health for the last five years of his life, but was still active on-air until November 1988. It is felt that his interest in radio extended his life span, and he had many friends on the radio.

A large attendance at Penrith Uniting Church bore testimony to Syd's standing in the Church and Community.

Syd is survived by a younger brother Stan, and sister Vera, son Ken (VK5AGW) and wife, Jann, daughter, Joan and her husband, Peter, grandson Charles and his wife Julia, grand-daughters Robyn, Annette and Helen and great-grand-daughter Kirili.

He will be missed by many.

Ken Westerman
VK5AGW

Graham W Haughton VK4LW

Graham, VK4LW passed away suddenly on 31 May 1989.

He obtained his licence in 1958, but did not become interested in HF DX until the later years. Not the twenty-second QSO type, he preferred to get to know the overseas operators of the stations he worked, and soon had many regular skeds and friends in the USA.

Active and generous by nature, VK4LW found great satisfaction in service to others and willingly did his bit: WIA Treasurer 1960, VK5WIA Station Manager for some years, and an RD Contest scrutineer.

Apart form AR activities, Graham was a member of the Organ Theatre Society of Queensland, and found time to act as a voluntary bus driver during Queensland's World EXPO Fair. A member of the Masonic Lodge, he was driving a bus load of Masons on a trip when he became fatally ill.

VK4LW was a man of self-discipline who considered priorities, and was conscious of the need for self-improvement. To this end, not satisfied with the AOCP qualifications, he was preparing to undertake a course in advanced electronics at TAFE when he became a SK - at the same time as his good friend, Bill McDevitt VK4XM.

Graham Haughton, a pharmacist by profession at Oxley, Brisbane is survived by his YF, Noela (also a pharmacist), sons Geoff and John, and daughters Jenny and Anne. He will be sadly missed by both the amateur and wider communities.

A Shawsmith
VK4SS

Murray Charles Foot VK5BE

I am writing on behalf of Mrs Sally Foot to advise, with regret, that Mr Murray Foot VK5BE of 30 Baker Street, Somerton Park, SA passed away on 16 January 1989 following a short illness.

Murray was very active in the post war years, having obtained his licence in 1949 and home-brewed many conversions of wartime radio equipment for amateur use. His special interest was the use of cathode modulation and early SSB.

He was also very involved in studio photographic techniques, and enjoyed listening to opera with his family at every opportunity.

Murray was a medical orderly in the Army during WW2 and served a long period in the New Guinea/Kokoda area. He returned to A G Healing in Adelaide and was well known for his expertise and precision in workshop practice.

In 1959 he had a change of environment, with sea going experience an worked with the Commonwealth Lighthouse Service in South Australia, until his retirement in 1986.

Before retirement, Murray was often heard portable from various Lighthouse stations around the South Australian coastline on 80 metres, or if possible, the two metre gear was at the ready for a contact from the remote sites around the coastline.

Sincere condolences to his wife Sally, and family.

Ron Coat
VK5RV

John Rankine VK5JF

The members of the Kangarudarimau Net have had a very sad loss. They lost their founder and net controller for the last twenty years. Every day at 10 GMT and on Sundays at 23.30 GMT, John Rankine VK5JF would be tuned up on 14.250 MHz calling for members to net on to his frequency, as he had very often moved a few kilohertz to avoid QRM.

John started the net to continue QSOs with the friends he made on his tours to South-east Asia. He had so many Indonesian friends that even the President of Garuda Airlines, Lumenta YB0BY would always make sure that he had a flight to visit his friends, and in Jakarta he would stay with Lumenta. He could even speak the lingo, and on the air he would never forget anybody's birthday, besides being there to greet us on the various festival days.

If he had to go on holiday, as he did in December 1980, the FT101B would be fitted to the car and the helical antenna at the back bumper would serve him to get on the air, regardless of where he was, to be on time for the net. On this trip from Adelaide to Melbourne, a leak in the radiator was quickly fixed with a self-tapping screw put into the hole and that screw stayed there until John sold the Falcon to buy a Mitsubishi Van.

He was a very talented man, and could do fault-finding with a screw driver. He ran Farr Electronics, where he would take on any repairs on electrical appliances, and his popularity saw him making many house calls. He was very good at editing 8mm films and video tapes that he had taken on this travels, and many members of the Kangarudarimau net have copies of these tapes. VK6NB Cyril, VK6DL Vic and VK6HT will vouch for this very good editing of video tapes, as they had similar interests, and he would share his experience with them.

Once John was asked if he would look at some very sophisticated equipment which was used to X-ray aircraft metal for cracks. It was very expensive and the experts from the country from which it was bought were finding it difficult to get working. John was asked if he could have

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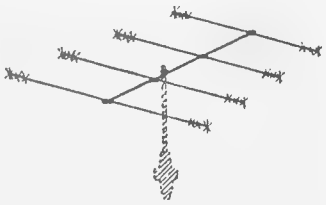

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a look at it. He told the people concerned that he was not familiar with computers and the more advanced electronics, but he said he would have a look. He did so, and got a few million dollars worth of equipment working! His sharp eye saw a paper label preventing a switch from making proper contact. We wonder what was his reward?

The name of the net was firstly the Yellow Banana (YB) net, and then later called the Kangaruda (the Australian Kangaroo and the Indonesian Garuda put together.) The Harimau (tiger) was brought in when he, on his other trips to Southeast Asia, made many friends in the Malaysian, Singapore, Brunei area. Thus, the three put together became "Kangarudarimau". A logo was designed by John, who got an art teacher in Adelaide to touch it up, and it was sent to Mal 9M2MW to see if it would be acceptable and then printed. So in 1979, at the SEANET Convention In Penang, note pads with the crest of the net were distributed by John to the regular members of the net. A few rubber stamps were produced and distributed, so members could print the crest on their letters to each other.

John had great foresight; he saw how valuable the net would be to all who used it. On a few occasions John kept radio silence while rescue operations used the frequency to carry out search and rescue in response to "Mayday" calls made on the frequency. Net members, nearest the party requesting help, would do all they could to get the authorities of their country to respond. The longest time taken for such an emergency was that of a yacht called "The Whistler", which had a very sea-sick woman on board, had broken its propeller shaft, and there was no wind to sail to Penang. Twenty thousand pounds of aviation gas were used to locate the boat, as it was using old sun charts, and the Search and Rescue helicopters had to search many areas until, with the help of an American research ship in the Straits of Malacca, it was located.

One only had to mention a problem to John and he would respond very promptly. TVI was a common problem and Leong 9M2FZ from Penang remembers, with sadness, how even though he was not too well, John responded to his TVI problem by sending him information on how to build filters to prevent TVI. John was a valuable source for parts and components for any projects on which anyone was working, and he almost always had information on components that members of the net required.

Many visited him in Australia, and whether they were Hams or their friends, it did not prevent John from making sure they took back fond memories of Adelaide, if not Australia. He would be at the Adelaide airport to pick them up, and made sure that they had a comfortable room in which to stay while they were visiting. There was much fun and laughter when you visited John. Many will now miss, very much, the presence of this great friend from Downunder called "Pak John Adelaide", as there were other Johns on the net. Even Barbara, his lovely XYL, was known as "Ibu Ambarwati" because the Indonesians just loved them and wanted them to be a part of them.

John was a regular at the Seanet Conventions where he met many of the Kangarudarimau Net members. He would tie in his travels to meet as many of his friends as possible. The SEANET Convention in November 1989 in Singapore was to be his next Convention, and so many will miss him when they come to the Convention.

At least the Kangarudarimau Net will go on, and John will be remembered for all he did to share that great Australian spirit of friendship, to lend a helping hand when needed. Yes he was there when we needed a friend to share hour challenges. We said farewell to John on 21 May 1989. Yes, farewell mate, CUAGN soon.

Malcolm Westwood 9M2MW
via Jim Jones VK5AAO

National Scout Net

The Scout Association of Australia conducts a weekly net at approximately 0200 UTC on Sundays.

The schedule is :-
1st Sunday 14.190 MHz
2nd Sunday 21.190 MHz
3rd Sunday 14.190 Mhz
4th Sunday 28.590 MHz
5th Sunday unofficial sked on 14.190 MHz

The National JOTA Coordinator, Peter Hughes VK6HU has taken out the callsign VK6SAN which stands for Scout Australian Net. Peter said he hoped other state branches of the Scout Association would also use SAN suffix callsigns.

The 32nd Jamboree-on-the-Air will be held on the weekend of October 21 and 22, 1989, and now is the time to start planning for your involvement. ar

Solution to Morseword No. 29

Across: 1 slit 2 bead 3 felt 4 rave 5 kilt 6 Roma 7 asset 8 Oho 9 sit-in 10 hies

Down: 1 raid 2 stage 3 earl 4 hens 5 tears 6 suite 7 ayes 8 rind 9 VIP 10 cone

	1	2	3	4	5	6	7	8	9	10
1	·	·	·	·	—	·	·	·	·	—
2	—	·	·	·	·	·	—	—	·	·
3	·	·	—	·	·	·	—	·	·	—
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6	·	—	·	—	—	—	—	—	·	—
7	·	—	·	·	·	·	·	·	·	—
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10	·	·	·	·	·	·	·	·	·	·

OVER TO YOU

Morse Tapes Wanted

The article "Morse Forever" (page 46, Mar AR) was very interesting, and again illustrated the triumph of morse over later technology under adverse conditions. Particularly appreciated, was the news that all communications personnel in the (British) forces are now required to be CW operators at 20 WPM.

A note dated 31 October 1988 from Bruce GW4XXF addressed to me reads...."My only recording of me using CW at sea is sending a TR to VIS on 500kHz. With 500kHz and CW rapidly being phased out due to SATCOMS, SITOR, etc, many of the coast radio stations are being closed down. Here we have lost GNI, GLV, GIL, GND, GKZ, OSA, ZDL. In the states WSF, WSL have gone, VIM is closed and the writing is on the wall for many more. We are trying desperately to get 500kHz signals on tape all over the world, and recordings of stations going silent key - to build up an exchange library of historic call signs. Can you help in getting your area covered?..."

Perhaps readers who are interested in, and able to help Bruce with this project by providing information or tape recordings, could contact either Bruce or myself.

Max Pieremont VK2APD
11 Cotton Street
North Epping 2121

Clandestine Traffic?

The Bill Roper article in the May issue of AR and, in particular,, the comments that "There is no evidence that significant numbers of new amateur radio transceivers are now being used on commercial frequencies", may not stand up to close examination.

Advice on the conversion of amateur transceivers to full transmit coverage and other unsavoury actions, do take place on the amateur bands on an organised basis. Highly organised groups in VK/ZL operating on the 2Øm band around 14314 kHz offer a number of dubious services and advices to /MM stations. Further, during a period of listening on these frequencies, lasting only a few hours daily, for a few days I heard and recorded the following incidents :-

(a) Assuring vessels who required such assurance that no information on their movements, ownership, or number and names of people on board would be supplied to Australian Customs.

(b) Agreeing to a request from a /MM station for information to enable a TS43Ø to be converted to general coverage transmit.

(c) Organising a "One Ringer" - a system of utilising the international and national public telecommunications systems without cost.

(d) Relaying third party traffic from Pacific Island countries through New Zealand to Australia in contravention of the New Zealand no third party traffic privilege at that time and the absence of a VK/ZL third party traffic agreement.

(e) Contents of third party traffic - normal commercial transactions such as buying routing supplies from commercial houses and arranging payment over amateur radio. Such items in no way related to amateur radio and the purchaser was not an amateur, but a friend of a licensed operator.

(f) Soliciting for third party traffic.

(g) Advertising and recommending the commercial services provided by an amateur friendly to the organised groups.

Efforts by me to discuss some of these activities with the amateurs concerned resulted in an organised and concerted tirade of abuse and denigration - mostly based on errors and distortions, that only ceased when I advised the main perpetrator that I had briefed my solicitors and would commence legal action if the defamation continued.

As a concerned Australian, I cringe when I hear vessels being assured that information will not be given to Australian Customs. As a concerned amateur, and a concerned shareholder in a major Australian electronics company, I wonder at the damage done to my hobby and my investment by amateurs who freely advise yachts or others how to modify amateur gear for all band transmitting. As a concerned worker in the telecommunication industry, I am alarmed at the damage to my livelihood by the unrestricted third party traffic scene.

I would urge any Australian amateur or SWL who hears vessels asking for, or receiving assurances that their activities will not be conveyed to Customs, to note the details and supply the information to Customs, along with the notation that the vessel required such information to be kept confidential.

The pity of it all is that the net controllers freely state that many /MM stations utilise amateur radio for their own financial benefit, thus, the interest of amateur radio generally is of no consequence to them.

I wonder how SWL's and others, on hearing these activities, distinguish amateur ratio from CB, or do they?

Deane Laws VK4ALN
27 Awoonga Avenue
Burleigh Heads 4220

Cost of Membership

I think it is necessary to make a few comments about the new fee structure proposed by the Wireless Institute of Australia.

Firstly, I am, and intend remaining, a member of the WIA. As a pensioner, the increase in membership will be a proportionally larger percentage of my income than most members, even allowing for the rebate given by the WIA for pensioners.

As has been stated by the WIA Executive, this body is the only concerted voice that members of the amateur fraternity have available to present their case at Federal Government level. Individual representations by amateurs acting off their own bat, while perhaps laudable, can only lead to chaos when passed to the relevant Department from the responsible Minister's office. A number of individual letters reflecting differing viewpoints of individuals, each considering his own interests to be of greater importance than other users of the Amateur spectrum, can only lead to a strong desire to drop the whole thing by the Minister, and the policy determining members of DOTC. If these people take the view that amateurs cannot speak with a united and *reasoned* voice, who can blame them for deferring action or becoming less interested in our case in future.

This point highlights the need for the existence of the Institute - its ability to speak responsibly for ALL members of the Amateur Service *directly* to DOTC, and the organisation of the necessary infra-structure is quite complex and time consuming, not to mention the expenses involved.

As publicised, the needs for a fully professional approach to these and other needs within the organisation itself are quite apparent. Again, these needs can only be funded by revenue earned by the Institute.

It has been suggested to me that the money paid out as salary for full-time employees of the Institute could be better spent as smaller honorariums to a larger number of voluntary staff, with an increase in efficiency. Nothing could be further from the truth! It is this same dependence on voluntary staff that led the Institute very inefficiently down the drain, until it was foreseeable that the Institute would cease to exist in the VERY near future. I am not knocking or decrying the efforts of those members of the Institute who gave unstintingly of their time and energy in the past, and who are still doing so, but they were mainly untrained in the administrative field. It is a terrible indictment of modern life that very few people will undertake any voluntary effort on behalf of this, or any other, organisation. The membership prefers to leave these time consuming tasks to those already doing them, while reserving the right to criticise them for doing their best, without any lead from the members, who seem too apathetic to raise their voices with a "yea", or a "nay" on important matters.

The appointment of several full-time professional staff recently has already showed dividends in the improved production of the magazine - Amateur Radio - and in the increased advertising from a more vigorous pursuit of advertising revenue. The appointment of several members of the Federal Executive in the Canberra and near NSW country areas has provided greatly increased access to DOTC's Head Office, and reduced the need for travelling time and expense as existed when the Federal Executive was housed in Melbourne exclusively.

During the more laissez-faire years of administration in the past, the ability to keep abreast of inflation and rising costs was never fully carried out, and a policy of not raising fees and still trying to give the same service, resulted in the need for a heavy, but realistic, increase at the present time, BUT we are only to the same relative level of fee structure as we would have been had an annual increase, in line with inflation and rising costs, been charged earlier.

Concurrent with these increases in inflation and costs, another rather costly burden is placed

on the Institute and that is the necessity to be represented at WARC 1992 or 1993. This is to be held in Geneva, one of the most expensive venues in the world, and the costs of the *Australian* amateur representation is to be met out of the WIA revenue, not, let me hasten to point out, from the pocket of ALL Australian amateurs. For the information of less experienced readers, let me assure you that WARC stands for World Administrative Radio Conference and NOT World Amateur Radio Conference. No representation means to virtually give away our bands by default; so this is a very necessary expenditure on the part of the Institute. I am very sure the WIA would welcome any donations for this cause and I understand a trust account exists for WARC expenses, so donations would be funneled to the account you desire.

When the new fee of $70 is measured against present day reality in sporting costs (and amateur radio can be classed as a sport), this is by no means unrealistic or excessive. If your sport is shooting, this $1.35 per week is only the cost of a few rounds of ammunition. It is less than two pots of beer, if that is your sport, or less than one packet of smokes per week. Also, for this outlay, you receive a monthly magazine which is well presented, covering your hobby and other services such as QSL bureau, technical development and so on.

Ted Roberts VK4QI
38 Bernard Street
Rockhampton North 4701

The Role of AAPRA in Packet Radio

On behalf of AAPRA, I would like to address the readers of AR.

As you will be aware, there is, at present, discussion regarding the use that Packet should make of the radio spectrum. From remarks made on the Packet network, it appears that there are misconceptions of the role of AAPRA in these discussions, formal or informal.

First, let me emphasise that AAPRA does not, nor does it wish to, attempt to regulate the packet scene. AAPRA has a view of how the packet network should be built up, and it is doing what it can to provide that network, in collaboration with like-minded radio clubs and individuals. When the network has been developed, AAPRA will have done what it has set out to do, and it is quite likely that AAPRA will retire from the field, and let the network users keep it working.

In the meantime, we have nothing to say about what anyone else may wish to do. This is what free enterprise means. There would be no Packet at all if a great number of individuals had not invested time and trouble into getting onto the mode. All the BBSs around the country are the result of the hard work and expenditure of individuals. AAPRA has no specific connection with them, but we are glad they are there. The BBS operators usually work well together, and they are not only self-regulatory, but listen to suggestions about their operations as well! Naturally, they also fight and bicker occasionally, but I am writing this letter because some have been suggesting that AAPRA has been interfering in their arrangements, or alternatively, that AAPRA has not been doing enough. AAPRA does make policy regarding BBS operation.

But that has to be qualified. Barry White VK2AAB is chairman of the repeater committee of the WIA, and so is involved in the use of the spectrum. He is also a very active member of AAPRA's committee. When he recently asked for BBS operators to express their views on proposals that FTAC had made for the WIA to consider with regard to BBS operations, he got quite a lot of flak. He reacted to there being only one reply by saying, if operators took no part in decision making, they could hardly complain later if things did not suit them. We all know (don't we?) that whingers are rarely doers.

There was unwarranted criticism, not only of Barry who has spent a great deal of his life working for Amateur Radio, but of AAPRA. We would welcome it if all concerned would accept the fact that AAPRA does not make policy regarding BBS's, and that we, and probably the WIA too, would be only too pleased if the BBS operators would develop their systems in whatever way any sensible body of people would do.

That said, AAPRA is very grateful for the cooperation of all packet operators in developing the Australian network. When VHF channels are properly allocated, and UHF and HF links are developed, the causes of the present congestion will disappear. Unfortunately, such things don't come about without hard work on someone's part, and an input from those who feel improvements are needed would be welcome. Any funds AAPRA has are for material assistance of clubs prepared to put in the effort needed to develop the Packet network. It is the support we have had in the past that has made this growth possible, and it would be a pity if misguided attitudes regarding our role in amateur radio developed as the result of over active imaginations.

John Jefferys VK2CFJ
Hon Sec AAPRA
59 Westbrook Avenue
Wahroonga 2076

Contests Develop Skills?

During this year's John Moyle Field Day Contest, our club station (VK6ANC) was looking for contest contacts on all bands. On one occasion, on two metres, the station at the other end said, "I'll give you a number - 73!" Was this person trying to be smart and get a laugh? Perhaps he was just being rude, or maybe he wasn't sure what to do in a contest.

I spoke to the same gentleman a few days later, and he said, "Now, do you get the message that everyone hates contests?" I'm sure that this isn't really true. Those people who say that they don't like contests either have a fear of participating in them, or they want you to think that they are too wise and mature to bother with "that" sort of thing anymore. (The old "Been there, done that" line.)

Well, I feel sorry for these people. I can tell you that most contests are a whole lot of fun, and not just a "phase you go through, but soon grow out of". There really is nothing to fear.

Just look at the DX that you hear during world-wide contests. It's the best way I know to work a hundred or so prefixes in a single weekend. It's just the shot for DXCC hunters, especially since a lot of "rare DX" locations are usually only activated during a major contest.

Okay, I hear you say, "I'm not a really keen DX hunter". Well what about your operating skills? How good are you? How can you make yourself heard through that pile up, with just 100W and a dipole? Do you know how to handle a pile up trying to work you? (VK is rare DX in many parts of the world.) Can you read, write and talk, all at the same time? A contest will teach you all of these skills in a very short time.

Still not convinced? Well, what about your station? With the bands really boiling, (we may keep all our current allocations at the next WARC if we use your bands) there is no better way to test your receiver. All those extra knobs you never use during the rest of the week really come in handy now. It's also a great opportunity to check out that QUAD or YAGI. How is the gain, the front-to-back ratio, radiation angle, etc?

How much do you know about propagation? Listen on your favourite band during the week; you'll hear signals coming from places where people are normally awake. Try the same thing during a 24 hour word wide contest, and you'll probably say,. "WOW, I wish the bands were this good all the time." Well, they probably quite often are, but everybody is asleep on the other side of the world during the week, so you would never know.

Lastly, contests are exciting. Watching that clock go through that last minute before the start of the contest, pencils and wits nicely sharpened, transmitter and ears finely tuned, headphones on, heart beating a little faster. Tick, tick, tick.....3,2,1.....OK Go!

The band explodes into life and the adrenalin is pumping, and there's the world in front of you waiting to be worked.

What a buzz. See you in the RD.

Alex Petkovic VK6APK
26 Freeman Way
Marmion 6020

A Hobby for Professionals Only?

If you want to know what is wrong with Amateur Radio, you only have to look at the back cover of the May 1989 issue of AR. What (average) radio enthusiast, in his or her teens, or twenties, could afford such a "Rolls Royce"? Also, how many adult amateurs could make full use of the facilities included, or would even want to?

The hobby, which it once was, has become too professional. We only have to look at the English magazine "Wireless World", which announced a few years ago that it would become a "professional publication". I fear AR may go the same way. There is no scope in any magazine for impecunious students to construct "short wave" receivers and transmitters from discarded broadcast band receivers as my generation did.

Further erosion of the hobby with the advent of television. Apart from the time spent in being entertained, instead of being on the air, the

problem of TVI began to appear. This caused those of us whose enjoyment of the hobby was only marginal, to further limit their operating times.

The introduction of single side-band disqualified another body of would-be enthusiasts who would have built and operated Amplitude Modulated gear. Why is AM not more frequently used in the HF bands which are frequently only sparsely occupied? Let's start a "Back to AM Week". That way, school students and their elder brothers/sisters would be able to hear amateurs in action on the family "Dual Wave" receiver as once was the case, and their interest become aroused.

The exploitation of sophisticated techniques such as RTTY, computers, packet radio and whatever else further isolates the plain, ordinary amateur, who only aspires to use simple equipment to communicate with simple-minded people like himself.

The overall decline in the volume (not technique) of amateur activity is attributable (at least by me) to the above, plus a few more, such as contests, that I could mention.

The impressive contents of the Call Book compared with the on-air activity, clearly indicates that the licensees are speculative, rather than operative, amateurs. It would be interesting to know how many of the thousands listed, however active or inactive, could be on the air in two minutes or less in response to say, a phone-call. With so many licences on issue, and so readily available, the DOTC must be, literally, "laughing all the way to the bank."

This is a brief account of the contributing factors in the decline of Amateur Radio, and I hope that some possible remedies may suggest itself from these observations.

Mervyn Smith VK2ZD
(First licensed 1948)
1 Bridge Street
Lane Cove 2066

Emergency Radio?

I was interested in the comments of VK4NFL on emergency calls in AR (Vol 57, Nr 5).

I have always been committed to the use of radio for emergency cases, and I can imagine that there are times when such calls are made within our service. It is, therefore, right that we should have to know the Mayday, Pan and Securite calls.

However, it is also a fact that the amateur service has never been a service with a specific intent to handle emergency traffic. The Services have their own systems for this, so that the only people that we could help would be ourselves; but again, my point is that the Amateur Service is not geared for listening on specific frequencies for amateurs in trouble.

I admire the CBRS for introducing this concept early in its history, even though it is often abused.

Has the time come for a new emergency monitoring part of AR, or is it reasonable to expect amateurs to rely on the authorised systems within other services?

Ian Godsil VK3DID
PO Box 411
North Balwyn 3104

Packet Via AUSSAT

On page 31 of the April 89 issue of AR there is an interesting item regarding AUSSAT and JOTA.

It is always gratifying to see mention of developments in Packet, so Peter Hallgarten's remarks concerning attempts to link packet stations via AUSSAT drew my attention.

It is true that the path delays demand some different parameters in participating earth stations, and another opportunity to try these out this year will be most welcome.

But, the point of this letter is to report that Packet contacts were indeed accomplished last year between VK2 and VK6. Jo, VK2KAA with VK6AGC (Gil), VK6ZTN (Joe), VK6ADF (Phil), VK6ZLZ (Christine), VK6LZ (Cliff). The frequency used was 146.625 MHz, at 1200 Bauds. Ian, VK6DNJ also made contacts experimenting with both 300 and 1200 Bauds.

This was on 16 October 1988.

I hope this is of interest.

John Jefferys VK2CFJ
Hon Sec AAPRA
(Australian Amateur Packet
Radio Association)
59 Westbrook Avenue
Wahroonga 2076

Brotherhood of the Air

Before the war clamped down on his activities, and he received his call-up for naval service, Telegraphist FL was a "ham" - the name given to those enthusiasts who spent night and weekend vigils searching the ether for radio contacts in all parts of the world. Armed with a thermos-flask of hot coffee, chocolates and cigarettes to help them "while away the long hours", they coaxed their low power transmitters to give that "little extra", which meant another QSL card - the visiting card of the air.

So extensive were the activities of the "hams" that the WFSRA (World Friendship Society of Radio Amateurs) was started in America, and when war came, its membership ran into thousands.

On one occasion, a Jap "ham" with whom FL had been in frequent contact said, "Our countries go to war, Fred, you wear your call sign, me no kill you." Crudely expressed, that was the spirit of the WFSRA. Many of its members are now in the Services, but are looking forward to the day when they will again address all men, irrespective of nationality or colour, as friend. Like the ether which is their medium, they want all men to be free and in close contact. More power to them when they again go "on the air".

"Raffer."

From "HMAS Mk III"
Published for the Royal
Australian Navy
by Australian War Memorial
Canberra ACT 1944
Contributed by N G Imrie VK2NGI
15 Manor Road
Hornsby 2077

(Does anyone know if WFSRA still exists? - Ed.)

Use of Q Code

Having read Amateur Radio for some six months now, I am not at all surprised that the hobby is not attracting our youth. If Australian Amateurs have little better to argue about than whether universally accepted abbreviations are used, they should join a geriatric debating society and leave limited air space for those who can make better use of it.

I shall, of course, remember if I ever contact any of these anti-Q code-on-phone fanatics to request politely that "they send me confirmation of receipt" via the Confirmation of Receipt Card Bureau. I would hate to offend them by requesting they QSL!

Page III of Newnes Radio Amateur and Listener's Pocket Book 1987 by Steve Money G3FZX (ISBN Ø 91259 X) states, "The Q-code was introduced primarily for Telegraphy using Morse and consists of a series of three letter codes which have specific meanings and enable a relatively long message to be conveyed rapidly. Many of the Q-code groups are used by radio amateurs to save time and may be used both for telegraphy and telephony contacts."

Pse QLF OM it's got bells on it.

KWH Perry VK5AFF (ex G3GKP)
153 Sturt Road
Dover Gardens 5048

Radio Theory Handbook Errata Sheets

I refer to a paragraph in the Book Review, Page 58 of June 89 AR, regarding the Radio Theory Handbook.

Your advice that "it was believed all known purchasers of the book had already been supplied with an errata sheet" is incorrect.

As late as June 1989, Prentice Hall kindly advised me were they still endeavouring to locate the addresses of people who had purchased the book direct from them and nothing has changed up until this date.

Please print this up-to-date information in August AR - you have their number if you need to contact Prentice Hall. Yours faithfully,

G Honey VK7NGH
63 Mirramar Park
Blackmans Bay 7052

Second Society?

Though a Micawberish attitude pervades our family attitude to money, the fact is that our income is in the lowest bracket (thus, missing out completely on "the tax cuts"!), and cash flow needs to be watched carefully. Consequently, with the projected rise to about $70.00 in WIA fees (possibly justified too), I am not really any further interested, at that price, in subsidising those who choose not to be members, and who, therefore, make no contribution to the cost of maintaining the only recognised organisation officially representing Radio Amateurs.

It is time the matter was brought to a head. This is an opportunity for WIA members of similar mind and/or income level to take a stand when renewal falls due.

For those with time health and commitment

Australian Amateur Packet Radio Association

A.A.P.R.A. in its objective of promoting Packet and assisting Amateurs to get going in the mode, can offer the following hardware and software:

TNCs
TNC 220 (Dual Port with Personal Message Service) $340
TNC TINY-2 (VHF only with PMS and KISS) $265
C=PAK FOR COMMODORES (Specify if SX)
PROGRAMME PACK (Disk, PCB, Edge connector, Operating and Assembly manuals) $65
PROGRAMME PACK (As above but with EPROM in lieu of Disc.) $100
COMPONENTS KIT (Includes Case and Plugs but PCB and Egde-connector come in the Programme Pack.) $80
ASSEMBLED MODEM (Available only to A.A.P.R.A. members with programme purchase.) $115
ASSEMBLED MODEM (Available only as an update to owners of a registered programme) $135
PCB & CONNECTOR ONLY (Registered owners only) $22
BEEPAK FOR MICROBEES, except ROM based. Specify disc size.
PROGRAMME PACK (Disk, PCB, Operating and Assembly manuals) $65
COMPONENTS KIT (Includes Case and Plugs but PCB comes in the Programme Pack.) $90
ASSEMBLED MODEM (Available only to A.A.P.R.A. members with programme purchase.) $125
MICROBEE COREBOARD MOD. (Required unless SCC chip has already been installed.) $40
TNC UPDATES (32K RAM required for updates.)
32K RAM Chip $40
TINY-2 TNC (1.1.6 & PMS & KISS) New $25
Your EPROM Re-programmed $12
TINY-2 TNC (1.1.6 & KISS) New $20
Your EPROM Re-programmed $7
TNC 220 (1.1.6 & PMS) New $25
Your EPROM Re-programmed $12
A.A.P.R.A. MEMBERSHIP (per annum.) $12
Overseas $18
BOOKLET "Introduction to Packet Radio" $2

All prices are in Australian currency and include Packing & Postage. Overseas add $5.00. All orders must specify callsign, disc size, and if Commodore SX.

Further particulars may be obtained by sending a SASE to the Secretary, A.A.P.R.A., 59 Westbrook Ave., Wahroonga. N.S.W. 2076.

who are non or former WIA members, this is perhaps the opportunity for you to form a separate organisation to suit your needs. Hopefully, with some goodwill, say, along the lines of ARRL Handbook - Amateur's Code, it would support the WIA (and vice-versa) in most important matters, and achieve the necessary official status too.

Provided that such a new organisation is formed, Amateurs could consider joining one or the other at the reduced level of fees which should pertain if most Amateurs did contribute to the cost of some suitable organisation to represent them: especially when dealing with Government, and in matters concerning protection of our rights and spectrum assignments. A Radio Amateur is unlikely to be able to exert much cogent influence individually.

So far as the above matters are concerned, Mr Micawber's approach is highly unlikely to work too well in 1989, or in the foreseeable future. Here at home we are still waiting for "something to turn up" in the fiscal department at date of writing.

73

Angus Garland VK4QV
17 Beeby Street
Nundah 4012

(We agree with almost everything you say, Angus, except for one point. It is totally incredible that two organisations, with their inevitable duplication of at least some facilities, could operate as efficiently as one. Also, the IARU, as one of its cardinal policies, recognises only one society in each country. Your first paragraph identifies the real problem that those who remain in the WIA subsidise those who leave or never join. If all VK amateurs were WIA members, our subscriptions would be much lower than they are. Ed.)

Impedance Measurements

The article on RF Impedance Measurement by J Hodkinson VK2BHO (AR April 1989) shows errors in the published results.

By Pythagoras $Z^2 = R^2 + J^2$. Now $23.5^2 + 70.7^2 = 5551$, whereas $74.2^2 = 5506$. Also, $56.7^2 + 86.9^2 = 10767$, whereas $100^2 = 10,000$. The error appears to be the use of Tan to calculate J. Better to use the Sin function relative to Z.

Using a computer to do these calculations seems like using a sledgehammer to crack a walnut. By the time the program had been found and loaded, the thing could have been worked out on a pocket calculator.

The formula used is :

$$\frac{A^2 - B^2 - C^2}{2\,BC} = -\mathrm{Cos}(A)$$

which gives the negative cosine of the angle between B & C. Now -Cos(A) = cos(180-A), so ignoring the sign it is also the Cos of the angle between Z & R. Now B/100 = C/Z. (B/100 if 100 ohm resistors are used.) R = Z cos(A), and $J^2 = Z^2 - R^2$. Inscribing the above formulae on the measuring head would seem the way to go.

I would assume that anyone with the knowledge to work out complex impedances would have a scientific calculator. My $30 cheapie can certainly run rings around my Commodore 128 when it comes to complex numbers.

I look forward to further thoughts from members on what is obviously a very desirable piece of equipment for anyone thinking of playing with aerials. In the case of a short circuit the Transmitter will still see an impedance of 50 ohms or 1:1 SWR. With an open circuit the Transmitter will see 100 ohms, still only a 2:1 SWR. This is a situation that most finals should handle at these low power levels.

Ray Hinks VK4LU
4 Plant Street
West End Townsville 4810

Fewer Braves?

We have all heard of the World's Greatest Treasurer, and now here in the WIA we have our own World's Greatest Optimist.

I refer to June AR Page 5, where Peter Gamble replies to a question from Jim Linton, who suggested that the WIA could lose up to 20% of its membership as a result of the increase in subscriptions.

Peter believes that the members will understand why the increase is necessary, and continue to support the WIA.

Now don't get me wrong, I am a staunch supporter of our organisation, and consider that the officials have done a great job under, sometimes very, frustrating circumstances, and I personally will renew at the higher rate, at least for the coming year.

But let's face it, how can any hobby organisation, which has battled for years to hold its membership numbers, increase the subscription by 40% and not expect a dramatic decrease in members. This is not just my own personal view, I have heard the matter discussed several times on 80 metres, and the majority quite candidly admit they will not renew.

I think the executive should, as a matter of urgency, review this decision, and seek ways of reducing costs, and other means of obtaining revenue, rather than increasing subscriptions, otherwise we may finish up with an organisation with quite a few chiefs, and very few indians.

Ian Alexander VK3DDL
7 Cambridge Drive
Glen Waverley 3150

Stolen Equipment

ICOM IC02A VHF hand-held transceiver, Serial 23186 with IC BP3 and IC BC25E rubber ducky aerial, Morse key HK707 Welz three in one SWR/PWR Meter, LP30 low-pass filter, Kenwood TS520S and Sony 2001D communication receiver stolen from 49 Richmond Street, Rockdale 2216 in early June. Contact owner B Dooley VK2KFI, Rockdale police, or your local police.

Tandy Presents Its New 10-Metre SSB/CW Mobile Transceiver

- **Full 10-Metre Coverage, 28 to 29.6999 MHz**
- **10-Channel Memory**

The new **Realistic HTX-100**, a superb 10-metre mobile radio for the amateur. It's compact, only 6.2x18.3x20cm, yet is loaded with the most wanted features.

Push-button selectors on the mike permit safe and easy QSY while mobile and the easy to program memory stores 10 of your favourite frequencies. A front-panel frequency-lock switch prevents accidental changes.

You can fine-tune reception with ±1.5 kHz RIT, (receiver incremental tuning) and select 25-watt or 5-watt output. Provides USB (upper sideband) voice operation and CW (code) with semi break-in keying and built-in CW sidetone.

The HTX-100 also has an easy to see backlit LCD display, hefty 3-watt audio output, built-in speaker and rear-panel jack for adding an external speaker. Bracket and DC cord included. The 10-metre fun is just beginning. Be a part of it with this affordable, top quality transceiver. 19-1101

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HAMADS

TRADE ADS

RADFAX2: Hi-Res weather fax, morse & RTTY receive program for IBM PC/XT/AT, on 360K 5.25" floppy & full Doc. Need CGA, input port, SSB HF FSK/Tone decoder. Has re-align auto-start view save print. Also "RF2HERC" same as above but for hercules card, and "RF2EGA" for EGA card (640 x 350 mode). Programs are $35 each and $3 postage ONLY from M Delahunty, 42 Villiers St, New Farm 4005 QLD. PH: (07) 358 2785.

AMIDON FERROMAGNETIC CORES: For all receiver and transmitter applications. Send large SASE for data and price to RJ & US Imports, Box 157, Mortdale NSW 2223. Close during August. (No enquiries at office please . . . 11 Macken St, Oatley). Agencies at: Geoff Wood Electronics, Lane Cove; Webb Electronics, Albury; Electronic Components ACT; Truscott Electronics Vic; Willis Trading Co WA; Associated TV Service Hobart.

FOR SALE - ACT

ICOM IC 761 HF Transceiver with built in Pwr supply, Ant Tuner, RF Speech Processor, with extension speaker, desk mic and hand held mic. All manuals boxes etc, immac condition $3,450 ONO ICOM IC228H 2mx FM mobile still in box unused $650 ONO call Chris VK1DO (062) 863208 AH.

FOR SALE - NSW

VAC/VAR Caps 3KV 1000.3KV 500. 15KV 300.10KV 50 $100 each. Vac/fixed 5KV 100 $25 each. Air/var Tx type $50. Rot/Inductor app 25mh $60. Tube ex/an 8295 new & socket $150. Swan 500c new finals $350. Atu At 200 $250. Transformer 240-2KV 1A $200. Vz-200+disk drive monitor cass. Printer software 16k RTTY etc $500. Will neg all. Bill VK2CWG, phone: (044) 761589, Narooma.

YAESU FT101E HF TCVR in good working condition $500. Dave QTHR VK2BRA phone: (02) 4871840.

ICOM R71A Communications receiver. Great performer! Mint condition. $1000. Kirt VK2DOJ, (02) 4362618.

Sockets for 3-500Z and 4cX1000A, 4CX1500B sockets and chimneys SK800B, SK806, (02) 9183835.

HF Linear Amplifier runs 4CX1000A Ceramic tube, floor standing, B&W tank coil, Eimac tube and socket, vacuum caps. C Core transformer. (02) 9183835.

AKASHI Model T430 through-line watt meter dual meters dual freq, 2 mtr and 70cm, 3 ranges each band, 120/5W, 120/20W, 20/5W N Connectors, new $75 ONO. QTHR Art VK2AS (02) 4671784.

YAESU FT 225 RDM, 2 xtals fitted channels 5&6 all mode USB-LSB-CW-AM-FM, $700. VK2BYS (02) 7252515.

KENWOOD TL922 HF Linear Amplifier, excellent performer, excellent condition, new tubes fitted recently. Phone Don VK2WU QTHR (049) 596335.

YAESU FT709R/FNB4, 70cm hand-held (as new) $380; ATN 420-470 MHz 14 el Yagi (unused) $110; 70cm Gutter-mount antenna $40. (02) 4514902 VK2AMT QTHR.

KENWOOD MC50 mic $40; Kenwood speaker SP230 with filters $40, VK2ZM QTHR (063) 631789.

HY-GAIN Model 204BAS antenna 4 element 20M monobander. VK2BZM David (02) 4982259.

FOR SALE - VIC

Roller Inductor 2 inch dia Heavy Duty 18µH with turns counter. $80 Jim VK3CX QTHR (059) 753 139.

RTTY System - Modem, Siemens 100 Series 1 teleprinter & XT/AT compatible RTTY software. Modem extras include: audio monitor speaker, microphone input for normal PTT operation, remote switching & RS-232 port. The teleprinter extras include: tape-reader, tape performer and answer-back drum. All in excellent working order $150. John VK3CMO (03) 8083335 QTHR.

PRINTER for C64-CPA-80 VGC $290. Franz (03) 7267137 VK3DVD.

CICADIA.300 Dataphone Modem. $150 in VG cond - ONO. Radio Shack, DMP100 Dot Matrix printer with parallel interface, plus new ribbon and manual $200 ONO, Arthur VK3CUA QTHR, Ph: (054) 437425.

TRANSCEIVER Uniden 2020, excel cond $450 ONO, also matching speaker and ext VFO, also Dick Smith complete freq meter ham bands, Wandin (059) 643721 VK3TL.

YAESU FT-208R 2m hand held with ext mic and charger in VGC $250, Chas VK3BRZ (052) 823167 AH.

Communications receiver YAESU FRG7700 in excel cond $450 ONO, Ph: (053) 358083.

KENWOOD TS-120S Transceiver $500; Kenwood TS520S Transceiver $600, modified for novice power MC-50 manuals for both. VK3GWK (051) 743930.

4CX1000K VHF-UHF TX valve. Suits 6m or 2m kilowatt amp - Current retail $1320 - Sell for $800. SK820 socket to suit - Current retail $2160 - Sell $1200. Transformers to suit HV $100. Filament $30. Grid $30. Panel meters, 180deg 4" scales to suit amplifier $20 each. Other high voltage components to suit amplifier, negotiable. The whole lot for $2000. Steve VK3YMY (03) 5732266 (leave message).

FOR SALE - QLD

KENWOOD TS-940S excel cond with Kenwood MC-85 desk mike, details and price to Noel, Ph: (079) 722862 VK4VJ.

TOKYO HL-60V 3.50 watts 2m $150; FM80 52.525 MHz FM 25W $45, VHF Coms 13cm transceiver partially assembled & 4 2C39 tubes used but OK $150; Crushcraft 10 ele 2m yagi $50. SCR11 working, offers (07) 8142480 AH, (07) 3774286 Bus, VK4WA QTHR.

DISPOSALS gear for sale at auction North Queensland convention Townsville September 22-24th, PO Box 964 GPO Townsville 4810, for details.

ICOM 701 transceiver 200 PEP, ICOM 701PS power supply 20 amps, ICOM RM2 remote control for 701, excel cond $650 the lot. Keith VK4AKS (071) 472367.

YAESU FT227RA 2 metre mobile FM txcvr. Has mobile mount, mic and handbook. GC $300. VK4KDP QTHR (07) 288 4911.

KENPRO rotator KR400RC $395 near new hardly used. HF beam CA-42 10M-15M 8.5dB gain 25dB F/B brand new never used $200. Geoff VK4CET (077) 737179.

FOR SALE - SA

VIC20 Computer $100; RTTY-CW cartridge for VIC20 $70; FT200 transceiver with FP200 power supply $225; 160m & 6m-2m valve transvertor to suit FT200, offers. VK5NA QTHR PH: (085) 656238.

FOR SALE - TAS

AOR 2001 scanner comm receiver 25-550 MHz AM, NFM, WFM $500; TM221A Kenwood 2m FM mobile, as new 10WH 50 WH $525; MMB38 Yaesu mobile bracket, new suit FT7476X, FT757 $30; FR757 relay box suit FT7476X,FT757 $30. QTHR VK7AN (003) 317914.

WANTED - ACT

KENWOOD TS530S or late series Yaesu FT101ZD, please phone Stirling VK1EV (062) 588483.

WANTED - NSW

ICOM Model AH2 digitally controlled HF, all band antenna system. QTHR Art VK2AS (02) 4671784.

HEWLETT Packard counter, prefer with freq converter to 500 MEG with manual state model number, David Kidd, 8 Gosse Ave, Dubbo 2830, Ph: (068) 818906.

ANTENNA 3 element TR-bander yagi, hy-gain TH3JR or similar. VK2BZM David (02) 4982259.

WANTED - VIC

ICOM IC-751A. Must be in excel cond. QTHR or Phone Hans VK3DNS on (03) 5575789.

TS440S or IC751 HF Txvr only in VGC, Franz VK3DVD (03) 7267137.

INFO: FT620B modifications for 6mtr FM conversion. Rotator to suit HF beam, 70cm transvertor. Info 20cm transvertor. Info home brew type. S Osborne (03) 7255969.

SPARE parts, modules or components relating to the Wavetek 3000 series of signal generators. Required for servicing and repair. Roy VK3AOH QTHR (03) 4996462.

AUST Official Radio Service Manuals from Vol 6 (1947 Receivers) onwards, also Vol 3 (1939). Phillips "Miniwatt" Data Book (Valves) 1962 edition, or thereabouts. Ralph VK3CQK QTHR (058) 521372.

AR-7 Coil box band "C" $10, plus postage for Moorabbin Club. Ken VK3ZFI QTHR (03) 5805347.

TRS80 CC (6809E) EC basic programs for AR or any other types of programs, (d/drive) SAE and disk will be sent. Arthur VK3CUA QTHR or PH: (054) 437425.

WANTED - QLD

OLD type transmitter, must be GC. Ph: (07) 3543989 QTHR VK4BHJ.

TRIBANDER for 10, 15, and 20m bands. Henry (07) 8821193 VK4KF.

MAINTENANCE manual or copy thereof for Racal RA329 Military HF Communications Receiver which incorporates an RA217D Rx and an MA323 FSK terminal unit. VK4KDP QTHR (07) 2884911.

I WILL give a good home to your Surplus Military Radios, parts, handbooks, etc. Details to VK4KDP QTHR (07) 2884911.

ICOM 2KL RF Amplifier and IC2KLPS power supply. Keith VK4AKS (071) 472367.

WANTED - SA

XTAL filter approx 15 to 30 kHz band width, freq not critical, some were used in older two-way radios. Chris VK5MC QTHR (087) 359014.

VHF Communications Magazine

The Wireless Institute of Australia is the Australian agent for VHF Communications Magazine - English translation of the magazine from Germany.

This popular magazine is produced four times a year and includes details of excellent kits for purchase from Germany.

1989 Subscriptions

Airmail	$28.00
Surface Mail	$25.50

Sent direct from Germany.

Also, limited supplies of back issues to 1970 are available - up to $7.50 each, plus postage.

Good quality binders for the magazine are available at $9.00 each, plus postage.

WIA Executive Office
PO Box 300
South Caulfield 3162
Ph: (03) 528 5962

HOW TO JOIN THE WIA

Fill out the following form and send to:

The Membership Secretary
Wireless Institute of Australia
PO Box 300
Caulfield South, Vic 3162

I wish to obtain further information about the WIA.

Mr, Mrs, Miss, Ms: .....

Call Sign (if applicable): .....

Address: .....

.....

State and Postcode: .....

Translator Not Accessible to Limited Licensees

The Ten Metre FM Users Group in Melbourne says it has received permission to operate what is believed to be Australia's first closed amateur translator station.

The Ten Metre repeater VK4RHF has an input of 29.540 MHz and an output of 29.640 Mhz. The repeater also now re-transmits its received signal on a frequency of 438.750 Mhz. But later this year, the group says VK3RHF will have an additional input frequency on 433.750 MHz. This means an FM signal appearing on 433.750 MHz will be re-transmitted on the VK4RHF Ten Metre repeater output frequency.

However, the Ten Metre FM Users Group says DOTC has told them that regulations prohibit Limited Licensees from using the 70cm input frequency and having their signal re-transmitted on Ten Metres. Thus, we will have a closed 70cm/ Ten Metre translator, only accessible to AOCP licensees.

The 70cm uplink will be secured to prevent Limited Licensees inadvertently - or deliberately - having the transmission appear on Ten Metres. This is achieved by having the VK3RHF 70cm receiver fitted with a CTCSS (sub audible tone) decoder. The required access tone will only be made known to AOCP holders.

The upgrading of this repeater should enable AOCP licensees to "talk to the world" when Ten Metres is open to DX by simply using a 70cm hand-held or mobile.

ar

ADVERTISER'S INDEX

ATN Antennas 17
Aust. Amateur Packet Radio Ass. 60
Blamac Pty Ltd 15
Dick Smith Electronics ..... 32 & 33
Electronics Australia ..... IBC
Electronics Today International ..... IFC
Emtronics 54
FT Promotions 47
Ian J Truscott's Electronic World 10
Icom ..... OBC
Kenwood Electronics Australia P/L 30
Magpubs 27
Silcon Chip Publications 46
Stewart Electronic Components 37
TSM Ideal 56
Tandy 61
WIA NSW Division Novice Licence 56
Wilkie Trading Co 16

TRADE ADS
RJ & US Imports 62
M Delahunty 62

HAMADS

Please Note: If you are advertising items For Sale and Wanted please use a separate form for each. Include all details; eg Name, Address, Telephone Number (and STD code), on both forms. Please print copy for your Hamad as clearly as possible.

*Eight lines free to all WIA members, ninth line for name and address Commercial rates apply for non—members. Please enclosed a mailing label from this magazine with your Hamad.

*Deceased Estates: The full Hamad will appear in AR, even if the ad is not fully radio equipment.

*Copy typed or in block letters to PO Box 300, Caulfield South, Vic 3162, by the deadline as indicated on page 1 of each issue.

*QTHR means address is correct as set out in the WIA current Call Book.

*A courtesy note will be forwarded to acknowledge that the ad has been received.

Ordinary Hamads submitted from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re—sold for merchandising purposes.

Conditions for commercial advertising are as follows: $22.50 for four lines, plus $2.00 per line (or part thereof) Minimum charge — $22.50 pre—payable.

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❑ For Sale
❑ Wanted

Name: .....

Call Sign: .....

Address: .....

.....

Radio Amateurs: Have you checked out EA lately?

No doubt most radio amateurs are aware that *Electronics Australia* is by far this country's largest-selling electronics magazine, as well as being its oldest (we began way back in 1922, as *Wireless Weekly*). But have you looked inside the magazine lately?

Remember Jim Rowe, VK2ZLO? Jim used to be Technical Editor, and then Editor – back in the late 1960's and 1970's. You may recall some of the amateur radio and test equipment projects he developed, which proved to be extremely popular. Well, Jim is back at the helm of the magazine, and has been busy giving it a new lease of life.

You'll now find lots of new 'departments' in the magazine, including Solid State Update (with news of new semiconductor devices), Silicon Valley Update (news from the USA) and What's New in Entertainment Electronics. Plus all of your old favourites like Forum, The Serviceman, Circuit and Design Ideas and so on. And of course plenty of 'meaty' technical articles and contruction projects.

FEATURES IN THE AUGUST ISSUE:

ADDING DATA TO NORMAL FM RADIO
Many of Europe's FM stations are now transmitting RDS – 'piggyback' digital data giving traffic information, weather reports, etc. It may be here soon, and here's how it works.

HAZARD LIGHT FLASHER FOR CAR ALARMS
Does your car alarm really attract enough attention when it goes off? Here's a project which makes it flash the hazard lights – and even pulse the horn as well, if you wish.

NEW AMATEUR NEWS, COMMS NEWS COLUMNS
In case you haven't noticed, we now have regular columns presenting both amateur radio news and communications news in general. Don't miss them!

What about *amateur radio* projects? Well, there still aren't too many, at present – Jim Rowe's been a bit too busy! But he's *very* interested in boosting the amateur radio content, so if YOU have developed an exciting amateur radio project, please contact Jim by writing to him at EA, 180 Bourke Road, Alexandria 2015 or phoning him on (02) 693 6620 – to discuss the possibility of publishing it as a contributed article.

Take a look at the new, rejuvenated *Electronics Australia* – on sale at your newsagent at the beginning of every month. Or subscribe now, by phoning (02) 693 9517 or 693 9515.

Electronics Australia

Australia's Top Selling Electronics Magazine

ICOM'S NEW HF TRANSCEIVER HAS MORE ARROWS THAN ANY OTHER HF TRANSCEIVER.

Frequency synthesis by Direct Digital Synthesizer which provides low noise floor and fast lock up.

Built in controller for automatic antenna tuning. Compatible with AH-3 HF automatic antenna tuner.

Twenty six memory channels. Channels 23 and 24 memorise both receive and transmit frequencies for split operation.

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105 dB dynamic range.

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20 dB receiver attenuator.

Switchable tuning steps, 20Hz, 50Hz, 1KHz and 1MHz.

And one highly advanced feature that no other brand of transceiver will ever have. Call Melbourne on (03) 529 7582 or interstate on (008) 338 915 for your nearest Icom stockist.

10 dB receiver preamplifier.

General coverage receiver 30KHz to 33MHz. (500 KHz to 30 MHz guaranteed.)

Built in CI-V system for computer control (CT-17 required) and transceive function.

100 watts output on USB, LSB and CW transmitting and receiving. 100 watts FM and 40 watts AM with optional unit.

VOL 57, NO 8, AUGUST 1989

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